PLATO
USER'S GUIDE

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REVISION RECORD

REVISION	DESCRIPTION
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A	Manual released. This printing obsoletes the previous edition.
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B	Manual revised to reflect most currently developed displays and procedures. Because of extensive
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LIST OF EFFECTIVE PAGES

New features, as well as changes, deletions, and additions to information in this manual, are indicated by bars in the margins or by a dot near the page number if the entire page is affected. A bar by the page number indicates pagination rather than content has changed.

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PREFACE

DEFINITION

The CONTROL DATA® PLATO® system is a computer-based educational development and delivery system.

AUDIENCE AND ORGANIZATION

The PLATO User's Guide can be used to orient new users to the PLATO system and serves as a comprehensive reference manual for more experienced system users.

The manual is organized according to the PLATO system's defined user types. Each section defines and describes the features available to a specific user type and gives step-by-step instructions for using each feature.

Some information contained in this manual is applicable to all users while other information applies only to specific user categories. All users should read the introduction (section 1) for a general introduction to the PLATO system and user categories and then read the section(s) of the manual designated for their specific user types.

General reference information is contained in the appendixes located at the end of the manual.

The information contained in this manual is accurate as of Cut 22 of the PLATO system software.

RELATED PUBLICATIONS

Refer to the following publications for additional information related to that contained in this manual.

Control Data Publication	Publication Number
PLATO System Overview	97406700
PLATO Terminal User's Guide	97404800
PLATO Author Language Reference Manual	97405100
PLATO Author Language Instruction Formats	97406600
PLATO CMI System Overview	97406100
PLATO CMI Instructor's Guide	97406300
PLATO CMI Author's Guide	97406200

Control Data Publication	Publication Number
PLATO Courseware Catalog	76360775
Micro PLATO User's Installation Guide	76368339
Micro PLATO Instructional Disk	76773000

These publications are available through the nearest Control Data Corporation sales office or Literature Distribution Services Center.

DISCLAIMER

This product is intended for use only as described in this document. Control Data cannot be responsible for the proper functioning of undocumented features.

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SECTION 1

INTRODUCTION

INTRODUCTION

INTRODUCTION

This section is a general introduction to the PLATO system and its user types. All users should read this section before using the PLATO system and before reading other sections of this manual.

DEFINITION

The PLATO system is a computer-based educational development and delivery system. It can be used to prepare and present instructional material, to summarize student performance, and to evaluate and revise materials. It can also be used as a communications tool between users working to achieve the same instructional and training goals.

The system is extremely diverse in its capabilities and has a wide variety of uses in many different environments. PLATO systems are found in schools, universities, hospitals, and businesses throughout the world. Students of all ages, business people, medical professionals, airline pilots, engineers, technicians, secretaries, salespeople, accountants, bankers, and bank tellers all use the PLATO system daily to learn new concepts, facts, and procedures; collect data; review mastered materials; simulate complex, dangerous, or expensive laboratory tests; or take qualifying, competency-based, or course completion examinations.

The PLATO system is a delivery system. It is not based on any one set of training or instructional principles. It can present instructional materials according to any instructional theory, philosophy, or methodology, or according to any training method or plan. It is, therefore, a valuable tool for researchers, as well as a teaching and testing tool for instructors and students which accommodates change and growth in education, training, and business, as well as state-of-the-art computer technology. The system provides a special author language which allows users without computer programming experience to develop instructional materials and tests. The instructional materials can be designed to meet any training needs.

Individualized instruction (for example, frequent testing, frequent feedback, detailed feedback, alternate learning paths, mastery learning, objective-based instruction) is most frequently chosen for delivery on the PLATO system because its presentation capabilities are broad enough to support these demanding instructional methods. But, the capability to support all methods, old and new, has been and will be retained.

The PLATO system is constantly being evaluated and upgraded. PLATO system users can rely upon a delivery system which today meets their needs their way, and which tomorrow will add the additional capabilities that improved technology and education and training research provide.

USER CATEGORIES

The PLATO system identifies each user as being one of three basic user types and treats each user on the system somewhat differently. The three user types are:

- Students (including multiples)

- Instructors

- Authors

The options and features available to users in each of these user categories is determined according to each user's individual needs. Some users can access all the features available to users in their specific user category, while others can access only a subset of those features, depending upon their specific needs.

The sets of features available in each user category overlap. This allows users who are instructors to access student features as well as instructor features, and allows users who are authors to access student and instructor features, as well as author features. It is recommended that new users initially start using the system as students and then gradually progress to instructor and author status. Refer to Recommended Learning Sequence for New Users later in this section for recommendations on orienting new users to the system.

Students can access fewer system features and options than other user types. They require minimal instruction on how to use the PLATO system because the system guides them through their lessons and activities. Instructors can access more system features and options than students, and therefore require more time to learn how to use those options and features. Authors can access the greatest number of system features and options of all user types and therefore require the greatest amount of time to learn about the system.

The following paragraphs describe each of the three PLATO user types.

STUDENT

A student typically uses the PLATO system to study a lesson or set of lessons called a curriculum. A PLATO student is not always a student in school but can be anyone using the system for instruction or for information. The system guides the student user to a specific lesson, program, or index of lessons or programs. Because careful guidance is provided, many infrequent users utilize student sign-ons (a user identification which is registered in the PLATO system) which take them directly to what they want to see or use (executive report generators, data summaries, or instructional evaluation tools). A user can be assigned a student sign-on when a predetermined set of lessons, features, or programs is needed. Only a small amount of instruction is needed for students to learn how to study lessons or access programs and system features.

The PLATO system keeps a student record or file for most students on the system. A student record stores various kinds of information about the student such as the name of the lesson(s) the student is studying, the number of hours the student has used the system, test scores, and other information.

A multiple is a special kind of student user. Most often, multiples are users who are not assigned to specific lessons or activities, but are users who want to see examples of various features, capabilities, and lessons. Multiples share sign-ons with other multiple users. That is, they share the same identification required to use the system. Because multiple users share their sign-ons with other users, the system does not keep records of lessons completed, test scores, and so on, as it does for student users. Each time a multiple user signs on to the system, the system treats that user as if it is the first time the user is signing on.

INSTRUCTOR

An instructor can enroll and remove students from courses, review lessons, write and read notes to and from students, see information on student performance, and collect student data. Instructors also help students when problems arise. They can organize lessons into curricular groupings suitable to various classes of students, and can define the kinds of student information they want collected for each curriculum.

Instructors can work and communicate with other instructors or authors writing or testing new lessons. In addition to their own instructor capabilities, instructors can access all the system features students can, and can view lessons and materials as students do.

Some instructors are also account directors. Account directors coordinate and manage the use and allocation of contracted PLATO resources.

AUTHOR

An author develops instructional materials for the PLATO system. Authors communicate directly with the system by means of a computer language called the PLATO Author Language. Authors have access to files on the system and can write lessons by inserting, modifying, or deleting information in these files. They can review completed lessons and lessons they are developing.

Authors can access communication features on the PLATO system which allow them to obtain general information on system operation, plans, news, and new features; write notes to other system users; participate in group discussions; obtain help or suggestions from Control Data PLATO consultants; or communicate privately with other users. Authors can access all the system features students and instructors can, in addition to their own author capabilities.

Some authors are also account directors. Account directors coordinate and manage the use and allocation of contracted files used by a given customer and perform file management tasks such as creating, destroying, renaming, and lengthening files.

RECOMMENDED LEARNING SEQUENCE FOR NEW USERS

The PLATO system contains a large number of features and has many capabilities which can sometimes be overwhelming to new users, particularly new authors and instructors. A good way for new authors and instructors to learn about the system and become familiar with its features and capabilities is to initially start using the system as a student user and then gradually progress to an instructor user, and finally to an author user. Students can see and use many system features, but always in a controlled setting. As students, users practice interacting with the system and gradually understand its operation. Some examples of the typical kinds of things most new users gain from starting as student users are: learning how to sign on to and off from the system; recognizing when the system requires a typed response; learning the actions of function keys and becoming accustomed to using them; and understanding the general structure of most PLATO lessons.

Once new users have achieved a basic level of understanding as students, those users who are designated to become instructors and authors should be given instructor access to the system. As instructors, users are introduced to several new sets of features which were not available to them as students. Many of these features help users see some of the behind-the-scenes actions which controlled what they could see and do as students. Communications features are available to instructors, as well as documentation and word processing tools which introduce them to editing features.

After users are comfortable using the features available to instructors, those users who are designated to become authors should then be given author access to the system. As authors, users are introduced to several more sets of features which were not available to instructors. Many editing features are available to authors which allow them to write lessons for students to study. Authors can access all the features instructors and students can, in addition to those reserved exclusively for authors. Other features allow authors to act as consultants to help other users while using the system.

The following is a list of lessons which introduce several basic PLATO system features and provide examples of some of its capabilities. These lessons provide a good orientation to the PLATO system and give new users an opportunity to practice interacting with it. If you are a new user and are not initially given student access, you should contact the person who registered you in the system, ask for student access, and arrange to see these lessons before progressing to instructor or author access. If you are résponsible for registering users in the system and assigning user types, you should initially register all new users as students and assign these lessons as an introduction to the PLATO system.

PLATO File Name	PLATO Lesson Title	Purpose
∅whatsnext	What's NEXT	Defines basic terminology; introduces users to using the keyset.
∅genintro	An Introduction to the PLATO Terminal	Provides a general introduction to the PLATO terminal and keyset.
∅termcomme	TERM-comments	Describes how to use TERM-comment, a system feature which allows users to comment on lessons they are studying.
∅termconsu	TERM-consult	Describes how to use TERM-consult, a system feature which allows users to receive on-line help from PLATO system consultants.
∅notesintr	An Introduction to Notes	Introduces PLATO system note writing and sending facilities. Covers both general and personal notes.
∅rose	Rose	Illustrates graphics capabilities.
∅calculate	Calculation: a Touch Lesson	Illustrates touch panel capabilities.
∅darts	Darts	Illustrates how to numerically respond to test questions.

In addition to the above lessons, new users should also be given access to AIDS and the Catalog of Available Courseware.

USING THE PLATO KEYBOARD

The primary means of communication with the PLATO system is through the terminal keyboard. The PLATO terminal keyboard resembles a standard typewriter keyboard (figure 1-1). Like a standard typewriter, it has character, number, and punctuation keys (unshaded keys in the figure). The PLATO keyboard, however, also contains function keys (shaded keys in the figure). Function keys instruct the system to move from one screen image to another or add information to your present screen display. They are used instead of typing an instruction and are always represented with capital letters (for example, NEXT, BACK, and HELP are all function keys). Some examples of the kinds of things function keys are used for are: to tell the system you are finished reading the information on one screen display and are ready to see another; to go back and reread a screen display read previously; to see extra information to help you understand something; or to do some lab problems or exercises.

Which function key you press depends upon the kind of action you want to take. The following describes the function keys used most frequently by PLATO system users. New users should learn how to use these keys before using the PLATO system.

For more detailed information on the PLATO keyboard, refer to appendix A.
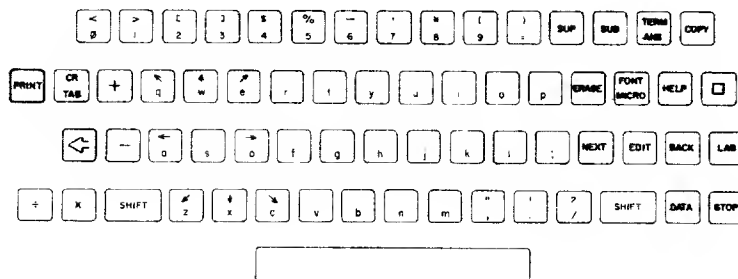
Figure 1-1. PLATO Keyboard

Key	Description/Function
NEXT	The NEXT key is the most frequently used key on the keyboard. It is located with the function keys on the right side of the keyboard. Because it is the most frequently used key, it is designed to be easy to find; it is the only key that is a different color from all other keys on the keyboard. Pressing the NEXT key tells the PLATO system you are finished typing an answer to a question, or you are finished reading the information on the screen display and are ready to see some additional information on the next display. Pressing the NEXT key instructs the system to respond to an answer you typed, or to add or erase information on the screen. Whenever you are in doubt about what to do next when using the PLATO system, press NEXT.
SHIFT	The SHIFT key is used to type the capital letters of the alphabetic characters. To type a capital letter, hold the SHIFT key down and press the desired character key. (For example, to type the letter B, hold the SHIFT key down and press the b key).
	The SHIFT key is also used to allow the numeric, punctuation, and function keys to have two characters or functions. Keys which have two characters or functions printed on them can produce two characters or perform two functions. For example, the number five key (5) types the % sign if the SHIFT key is held down while pressing the 5 key.
	There are several keypresses which require using the SHIFT key and another function key at the same time. These keypresses are always marked by a hyphen following the SHIFT notation. For example, SHIFT-NEXT means hold the SHIFT key down and then, while continuing to hold down the SHIFT key, press the NEXT key.
SHIFT-STOP	The SHIFT-STOP keys are used to stop a lesson or sign off from the system. They are also used during the sign-on sequence. To press SHIFT-STOP, hold the SHIFT key down and then, while continuing to hold down the SHIFT key, press the STOP key.
ERASE	The ERASE key erases all or part of the information a user has typed on the screen. Each time the ERASE key is pressed, one character is removed from the typed response. To remove a complete word, press the ERASE key while holding down the SHIFT key (SHIFT-ERASE). Erasing always begins with the last word or character typed.

NEW USER REGISTRATION

All users must be registered in the PLATO system before using the PLATO terminal and system for the first time. To register, you must give the system two identifiers: a name to identify you; and a group name to identify either your course of study, the material you should see on the screen (if you are a student), or other applicable information such as the group of authors you are working with, the company, school, agency, or organization you work for, and so on. Some examples of PLATO names and group names are: sally/music, john p/pilots, and mary smith/calculus. PLATO names and group identifiers are always written in this paired fashion with a slash separating the two identifiers. Either your instructor or another author or instructor in your group registers this information in the system for you.

After you are registered, you must give your password[†] before you can see any lessons or information on the terminal. Your password is a secret word which allows you to use the PLATO system. It ensures the system that you are the same person whose identifiers are registered in the system. You choose your password the first time you use the PLATO terminal. These three identifiers — your name, group, and password — are called your sign-on. The following defines and describes the three parts of the sign-on.

Name
Your PLATO name is the name you and the person who registers you on the PLATO system select for you to use when signing on to the system. It can be your full name, first name, last name, or nickname; or any combination of letters, numbers, or spaces up to 18 characters. Capital letters are never required in PLATO names and group identifiers.

Group
Your PLATO group is the name of a file on the PLATO system. It is assigned to you by your instructor or another author or instructor in your group. Your PLATO group contains the names of a set of people who have something in common on the PLATO system, such as taking the same course of study or writing the same lesson.

Each person listed in a group is automatically assigned a user record. Your user record contains information about you. It tells the system if you are a student, instructor, or author. If you are a student, your record can tell the system what lessons you are assigned to study, store information about lessons you have already studied, and save test scores for your instructor to see. If you are an instructor or an author, your user record can specify whether or not you can change students' test scores, assign or study lessons from a catalog, create or destroy user records, write and receive notes, create curricula, and so on. Generally, your record within the group tells the system what to do with you.

Password
Your PLATO password is your personal identification to the PLATO system. It is a secret word that you select or create which makes your sign-on uniquely yours. It tells the PLATO system that you are the same person who is registered on the system. Your password should consist of a series of letters, numbers, and/or spaces up to 10 characters. It should be unusual so no one can guess it, and should never be told to anyone. Do not choose obvious passwords such as your spouse's name; the name of your group, employer, or location; your pet's name; your telephone number; a period, comma, abc, or other words or character strings which can be easily guessed. Choose something with which only you can identify. Your password is stored in your user record. No one, however, can see the actual password. It is displayed on the screen as a random series of x's whenever you type it. Only you and the PLATO system know what your password is.

Each time you use the PLATO system, you must type your sign-on. You cannot use the system without typing your sign-on because this identifies you as a registered user of the system. The following are examples of sign-ons.

Name		Group		Password
ann miller	/	algebra	/	xxxx
jane p	/	logic	/	xxxx
butch	/	music	/	xxxx

The users' passwords are not given because users should never tell their passwords to others. Remember, the PLATO notation for a user's sign-on is name/group (for example, maria/math).

[†] Not all users are required to have passwords. Students for whom no record keeping is necessary (for example, young children or special students) are seldom required to have passwords. Instructors decide whether or not to require students to have passwords on an individual basis.

THE PLATO TERMINAL

The PLATO terminal you are using is one of three types of PLATO terminals. These are the Information Systems Terminal (IST), the Information Systems Terminal II (IST-II), and the Information Systems Terminal III (IST-III) (figures 1-2 and 1-3). Each terminal has four major controls. You should know the location and function of each of these controls before using your PLATO terminal. You will not use these controls every time you use the terminal, but it is important for you to understand how these controls work in order to correct minor problems that may occur while you are using the terminal.
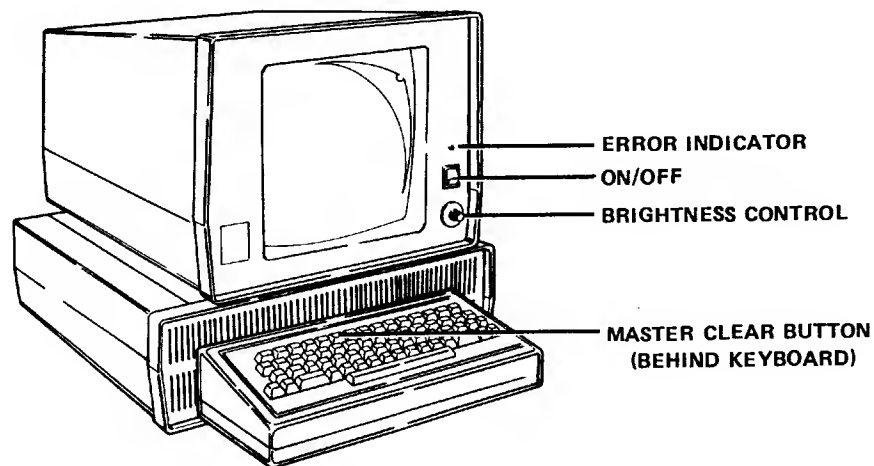
Figure 1-2. IST Terminal
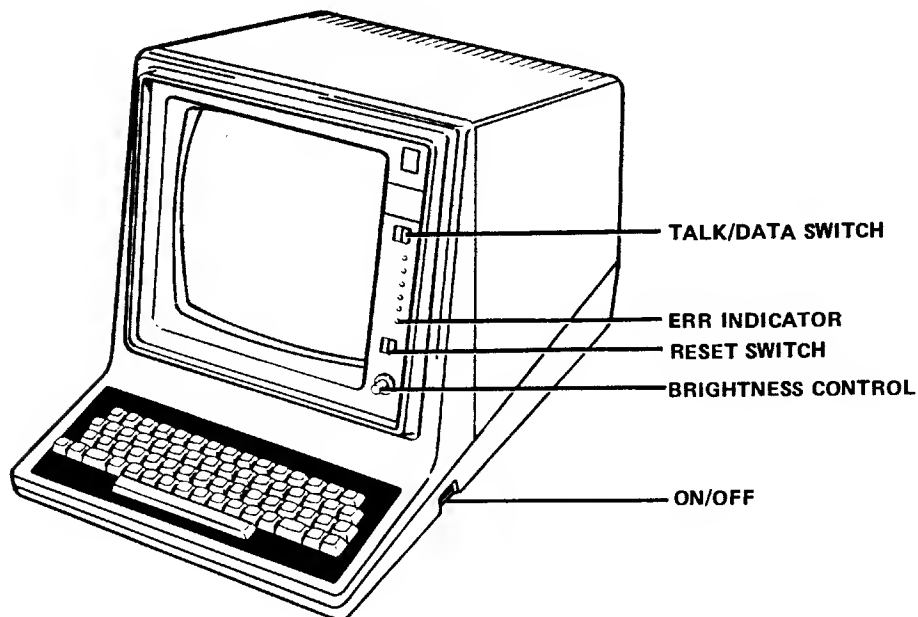
Figure 1-3. IST-II and IST-III Terminals' Exterior

97405900 C

ON/OFF

This switch must be set to ON in order for the terminal to operate. It is not necessary to turn the switch to OFF when finished using the terminal.

ERROR (ERR) Indicator

This indicator lights during a loss of communication between the terminal and the PLATO system. Usually, it clears automatically. If the indicator stays lit, press the STOP key or either the MASTER CLEAR button or RESET switch (depending upon the type of terminal you are using). If the light still does not go off, press SHIFT-STOP (hold the SHIFT key down while pressing the STOP key).

MASTER CLEAR Button (IST Terminals)

Pressing this button clears the communication lines. Press the MASTER CLEAR button if the ERROR indicator lights and the terminal ignores all keyboard and touch panel input. After the ERROR light goes off, press NEXT to continue the lesson you were working on. If this does not work, press SHIFT-STOP (hold the SHIFT key down while pressing the STOP key) and then resume your lesson.

RESET Switch (IST-II and IST-III Terminals)

The RESET switch performs the same functions as the MASTER CLEAR button. To clear the communication lines, press the RESET switch momentarily (less than 3 seconds). If this does not work, press SHIFT-STOP (hold the SHIFT key down while pressing the STOP key) and then resume your lesson.

BRIGHTNESS Control

This knob adjusts the brightness of the screen display to a comfortable viewing level. To increase the intensity of the display, rotate clockwise; to decrease the intensity of the display, rotate counterclockwise.

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CAUTION
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If the brightness control is set too high, the display will be out of focus and the life of some internal hardware may be shortened unnecessarily.

CONNECTING THE PLATO TERMINAL

The PLATO terminal can be connected to a central PLATO computer or to a local delivery device attached to the terminal. Terminals connected to a central PLATO computer transmit information through telephone lines. Terminals connected to a local delivery device transmit information from a flexible disk drive attached to the PLATO terminal (Micro PLATO). The PLATO IST-II and IST-III terminals can be used for either the central PLATO system or local (Micro PLATO) delivery.

The following describes how to connect the PLATO terminal to the central PLATO system and the Micro PLATO system.

USING THE CENTRAL PLATO SYSTEM

There are two methods of connecting the PLATO terminal to the central computer. These are the direct connection method and the dial-in method.

With the direct connection method, the terminal is always connected to the central computer. The terminal has a direct connection if communications lines and equipment directly connect the terminal to a central PLATO system. You can usually tell that your terminal is directly connected to the system if there is not a telephone near or next to the terminal. If you are using a terminal directly connected to the computer, turn the terminal on (if it is off) and proceed with the sign-on sequence. (Refer to How All Users Sign On, later in this section, to learn how to sign on to the PLATO system.)

With the dial-in connection method, the terminal is connected to the PLATO system by a telephone. You can usually tell that your terminal has a dial-in connection if there is a telephone near or next to your terminal. If you are using a dial-in terminal, turn the terminal on (if it is off) and connect the terminal according to the following procedure before proceeding with the sign-on sequence. (Refer to How All Users Sign On, later in this section, to learn how to sign on to the PLATO system.)

1. Do one of the following depending upon the type of terminal you are using.

    a. If you are using an IST-II or IST-III terminal, set the TALK/DATA switch to TALK. Dial the telephone number that connects the terminal to the central computer.

    b. If you are using an IST terminal, simply dial the telephone number that connects the terminal to the central computer. (No TALK/DATA switch exists.)

2. When you hear a constant high-pitched tone, do one of the following (depending upon the type of terminal you are using).

    a. If you are using an IST-II or IST-III terminal, set the TALK/DATA switch to DATA and hang up the telephone. Each time an IST-II or IST-III terminal is turned on and connected to the PLATO system, a 2- to 3-minute waiting period occurs as the terminal receives and stores information from the central system. Messages appear on the terminal screen as the central system sends information to the terminal. When this process is complete, the Welcome display appears on the screen.

NOTE

The 2- to 3-minute waiting period occurs whenever the terminal is turned on. To avoid this communication process from occuring more than once a day, leave the terminal on all day, turning it off only in the evening.

---

b. If you are using an IST terminal, do one of the following.

    1) If your terminal is equipped with a telephone, pull upward on the white key on the left of the telephone (figure 1-4). This disconnects the telephone handset and connects the terminal to the PLATO system. Set the handset aside, but do not hang up the telephone.

    2) If your terminal is equipped with an acoustic coupler, insert the telephone handset into the acoustic coupler (figure 1-5). This connects the terminal to the PLATO system.

3. If the red ERROR (ERR) indicator lights, press SHIFT-STOP several times (hold down the SHIFT key while pressing the STOP key). If the light does not go off after several attempts, press the MASTER CLEAR button or RESET switch. If the light still remains on, refer to Communication Errors in section 2.

4. If you hear a busy signal after dialing, all dial-in lines to the PLATO system are busy. Hang up the receiver, check the number, wait awhile, and dial again.

Refer to the PLATO Terminal User's Guide for more detailed information on connecting specific types of terminals to the PLATO system.
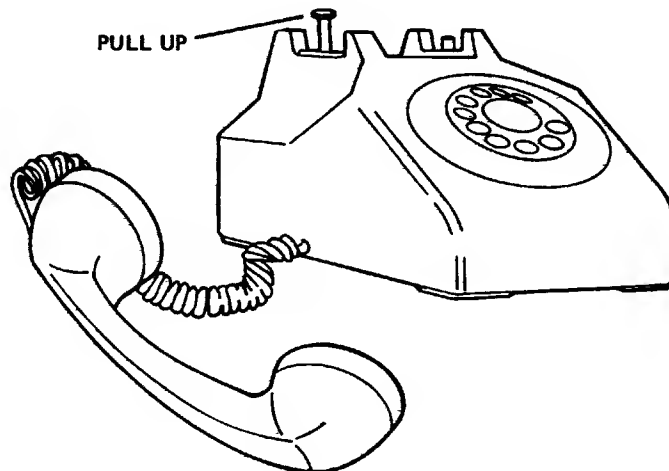
Figure 1-4. Telephone
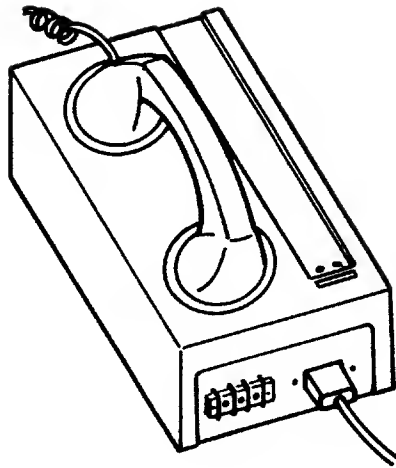
Figure 1-5. Acoustic Coupler

USING THE MICRO PLATO SYSTEM

The Micro PLATO system is a delivery system which can present PLATO lessons on a standard PLATO terminal without any connection to a central PLATO system. Rather than being connected by a telephone to a central PLATO computer, the Micro PLATO terminal (either an IST-II or IST-III terminal) is attached to a flexible disk drive (Control Data's PLATO Flexible Disk Subsystem), figure 1-6. Lessons are stored on flexible disks resembling 45 rpm phonograph records in their paper covers. To take a lesson, one simply loads a disk into the flexible disk drive and follows the instructions displayed on the terminal screen. The Micro PLATO system, like the central PLATO system, instantaneously interacts with users and guides them through their chosen lesson. The flexible disk (a magnetic medium) operates much like a record. As it spins in the disk drive, a lesson is transferred to the Micro PLATO terminal.

The following steps describe how to start and use the Micro PLATO system.

1. Turn on the disk drive.

2. Push the black button to open the door where the flexible disk will be inserted.

3. Remove the flexible disk from its protective envelope.

4. Insert the flexible disk (label facing you; it should be just to the right of your thumb). Push the disk until you hear a click.

5. Close the door by pressing down on the door handle until the door latches.

6. Turn on the terminal and follow the instructions displayed on the terminal screen.

7. Press the RESET switch on the terminal.
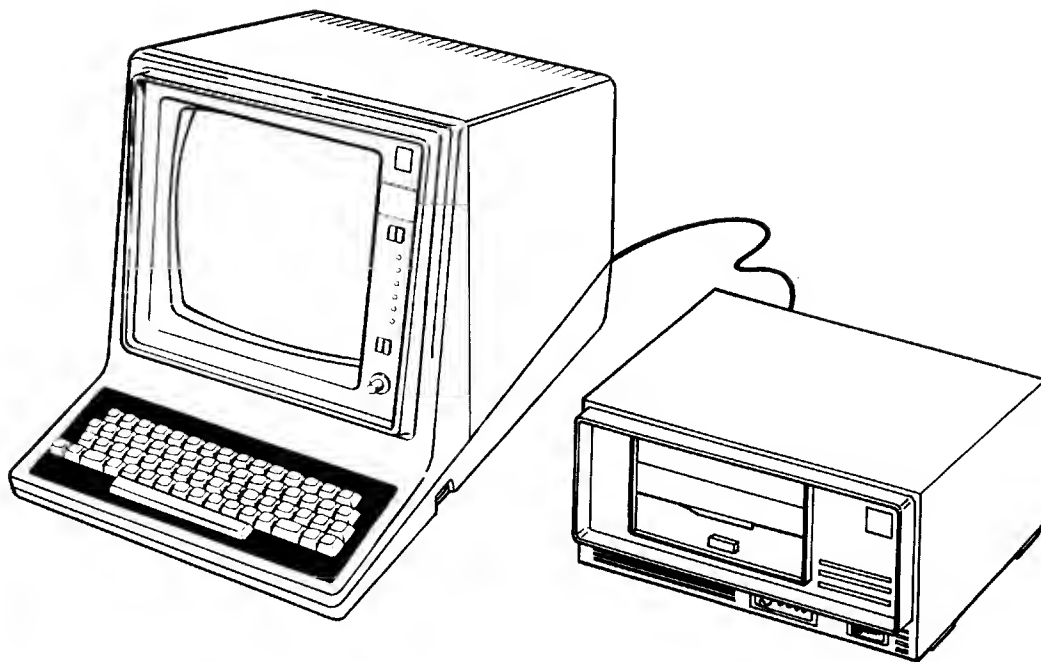
Figure 1-6. Micro PLATO Station

The following steps describe how to remove the flexible disk.

```
CAUTION
```

Flexible disks should be removed from the disk drive before turning off the equipment. Turning off the equipment with a flexible disk inserted could damage the disk.

1. Open the door.

2. Pull out the disk.

3. Replace the disk in its protective envelope.

Although the actual recording surface of the flexible disk is enclosed in a plastic jacket and then packaged in a protective envelope, disks must be handled with care. The following procedures will help prolong the life and ensure the performance of your disks.

- Do not write on labels once they are on the disk jacket.

- Do not attach anything to the disk jacket (especially staples or paper clips).

- Do not touch the disk surface exposed by the jacket slot.

- Do not twist, fold, or bend the disk.

- Do not attempt to clean the disk.

- Keep the disk away from magnetic fields and magnetized materials.

- Protect the disk from liquids, dust, smoke, ashes, and metallic substances.

- Do not eat, drink, or smoke while using the disk drive or handling disks.

- Store the disk in its protective envelope when not in use. (It also is a good practice to store disks in a closed box or cabinet if they will not be used for more than a short period.)

Published courseware for Micro PLATO delivery will use both the central PLATO and Micro PLATO delivery methods together. Central PLATO, usually through PLATO Learning Management, will provide testing and instructional guidance and management through a curriculum. Micro PLATO will be used to deliver instructional materials. Instructions on when to use Micro PLATO and what disks to use will be provided through the central PLATO system. An example of how both delivery methods could effectively be used together is: out of a set of five Micro PLATO stations, four could be used to deliver instructional materials using the Micro PLATO system while one of the five could be connected to the central system for instructional management purposes.

HOW ALL USERS SIGN ON

You must sign on to the PLATO system before you can see any lessons, files, or programs or interact with the PLATO system. The sign-on sequence is the identification exchange between you and the PLATO system. This exchange determines whether or not you can use the system as well as what you can do once you are signed on. You must repeat the sign-on sequence each time you use the system. The following steps describe how to sign on to the PLATO system.

1. When the terminal connects properly to the system, the following message appears on the screen: Press NEXT to begin (figure 1-7). If the screen shows anything else, press the BACK key or the SHIFT-STOP keys (hold the SHIFT key down while pressing the STOP key) several times until Press NEXT to begin appears on the screen.
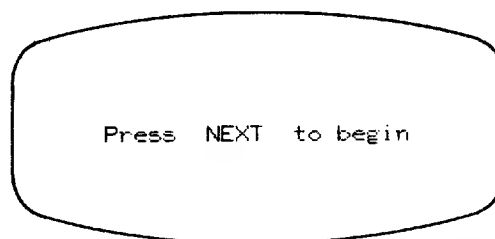
Press NEXT to begin

Figure 1-7. Press NEXT to Begin Message

2. Press the NEXT key. The Welcome display (figure 1-8) appears.

```
                        3:58 pm CDT

                Monday, September 15, 1980

             Welcome to the "minnc" PLATO System,
           a Control Data Customer Service System.




             Type your PLATO name.  Then press NEXT.



                    ▷


           PLATO® is a trademark of Control Data Corporation.
```
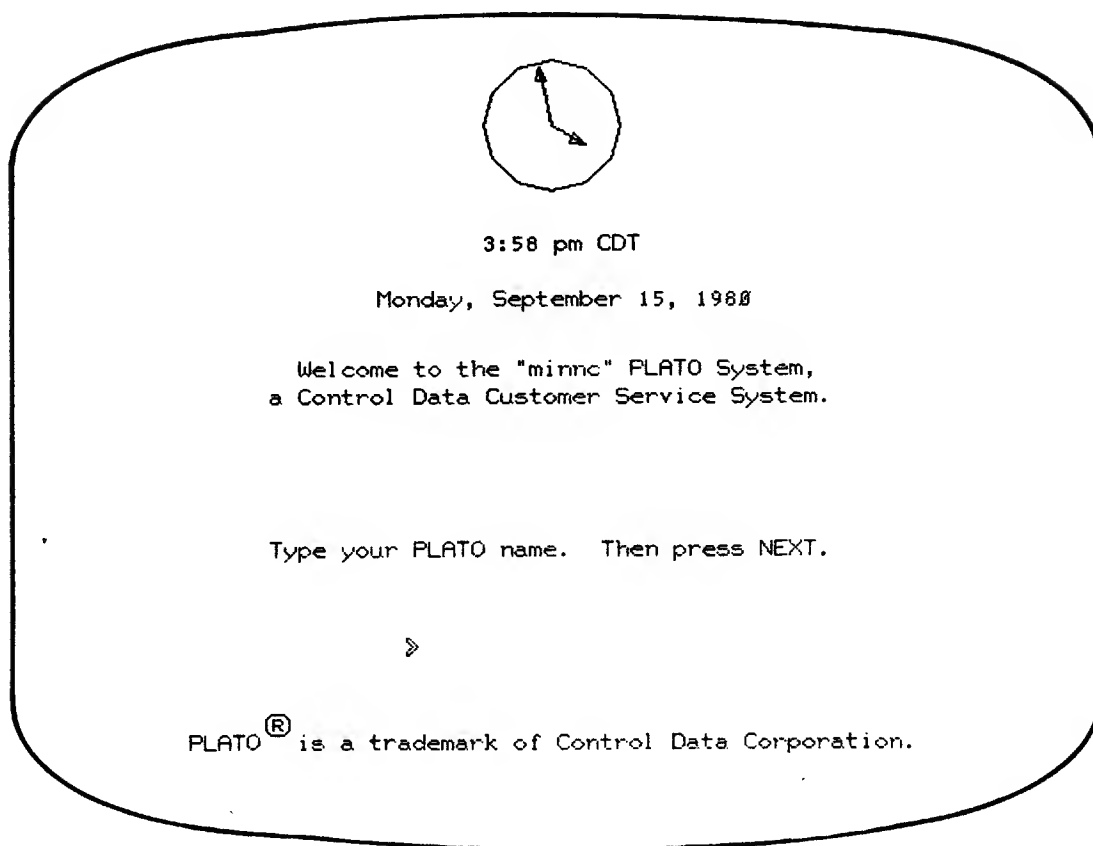
Figure 1-8. Welcome Display

3. Type your PLATO name. As you type, each character appears to the right of the arrow on the Welcome display. Whenever you see an arrow on a PLATO display, the system is waiting for you to type a response. Any response you type appears to the right of the arrow. If you make a mistake, press the ERASE key to erase each letter back to and including the mistake, and retype your response correctly from that point. When finished, press the NEXT key. The Group Name display appears (figure 1-9).

4. Type the name of your PLATO group. These characters also appear to the right of the arrow. When finished, press SHIFT-STOP (hold the SHIFT key down while pressing the STOP key).

Type the name of your PLATO group. Then, while holding down the SHIFT key, press the STOP key.

When you are ready to leave, you should press these same keys (SHIFT-STOP) to "sign off".
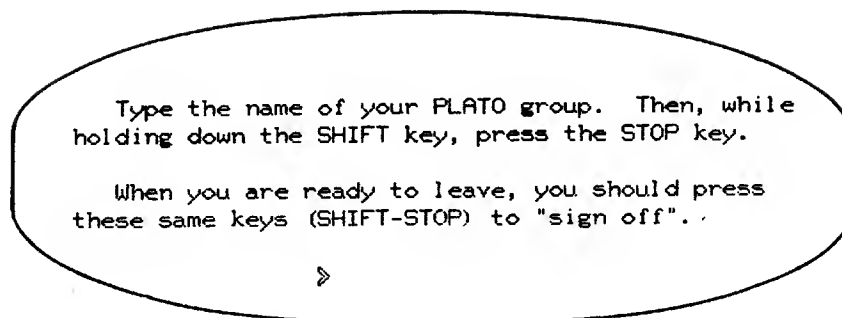
Figure 1-9. Group Name Display

5. The next display allows you to either select or enter a password, depending upon whether or not you have previously chosen or been given a password. If you have not chosen or been given a password, read step 5a. If the person who created your sign-on provided you with a password (along with your PLATO name and group), or if you previously selected a password, read step 5b.

   a. If you are required to have a password and this is the first time you are signing on, the Password Choice display appears (figure 1-10, part A). Select your password and type it carefully. A random number of x's appear to the right of the arrow as you type so no one can read your password. When you finish typing your password, press NEXT. Part B of figure 1-10 appears. Type your password again. Press NEXT and go to step 6.

   ┌──────┐
   │ NOTE │
   └──────┘

   Not all student and multiple users are required to have passwords. If this is the first time you are signing on and the Password Choice display does not appear, you are not required to have a password. Go to step 6.

   b. If you have previously selected or been assigned a password, the screen shows the Password display (figure 1-11). Type your password. Press NEXT. Go to step 6.

   ┌──────┐
   │ NOTE │
   └──────┘

   If you have forgotten your password, check with your instructor or the person who registered you in the system. Your instructor can clear your password from your user record and allow you to select another password.

6. A display appropriate for your user type appears on the screen. If you are a student, either an index, a lesson, or another planned activity appears on your screen (figures 1-12 and 1-13). If you are an instructor, the PLATO Facilities display appears (figure 1-14). If you are an author, the Author Mode display (figure 1-15) appears.

Choose a secret PASSWORD that you will
remember. Do not tell anyone what it is.

As you type your password, several X's will
appear so that nobody can see what you are
typing.

Type your password, then press NEXT.

≫ XXXXXXXXX

A

Try it again to make sure.

Type your password, then press NEXT.

≫

B
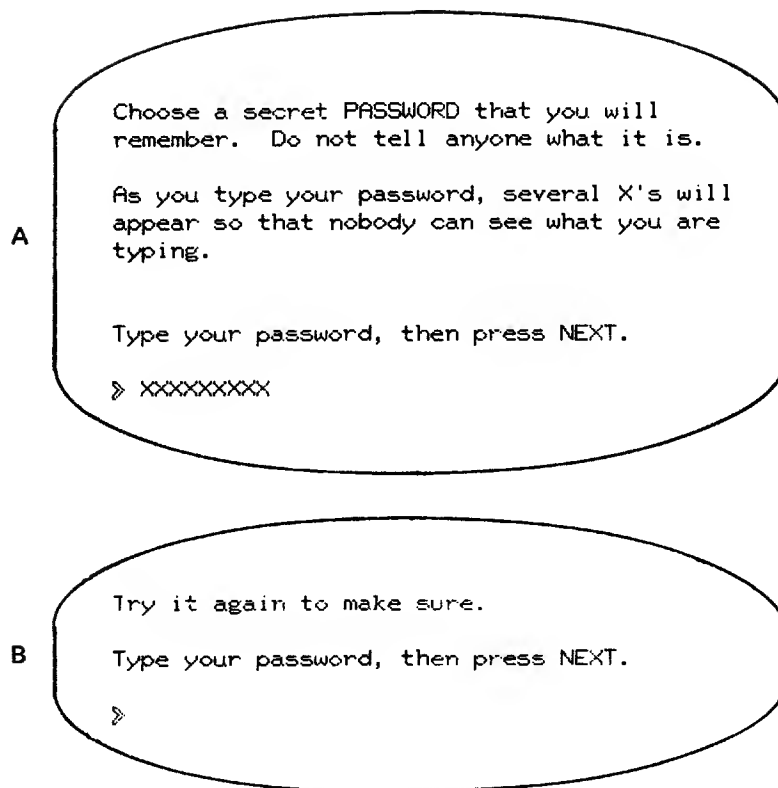
Figure 1-10. Password Choice Display, Parts A and B

Type your password, then press NEXT.

≫

OR... Press the LAB key for additional options.
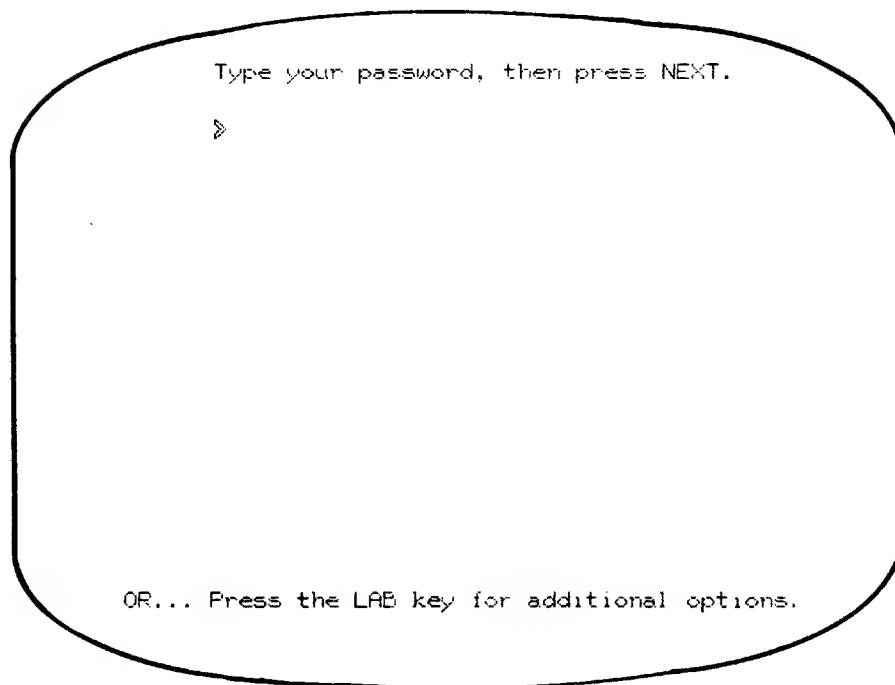
Figure 1-11. Password Display

PLATO Learning Management

Contemporary Biology

```
Name ........ student              Session # 6
Group ....... biol01a

Today's date ...... November 6, 1980
Last date on ...... November 6, 1980
```

Welcome back!

Press NEXT to continue

Figure 1-12. Sample PLM Curriculum Display
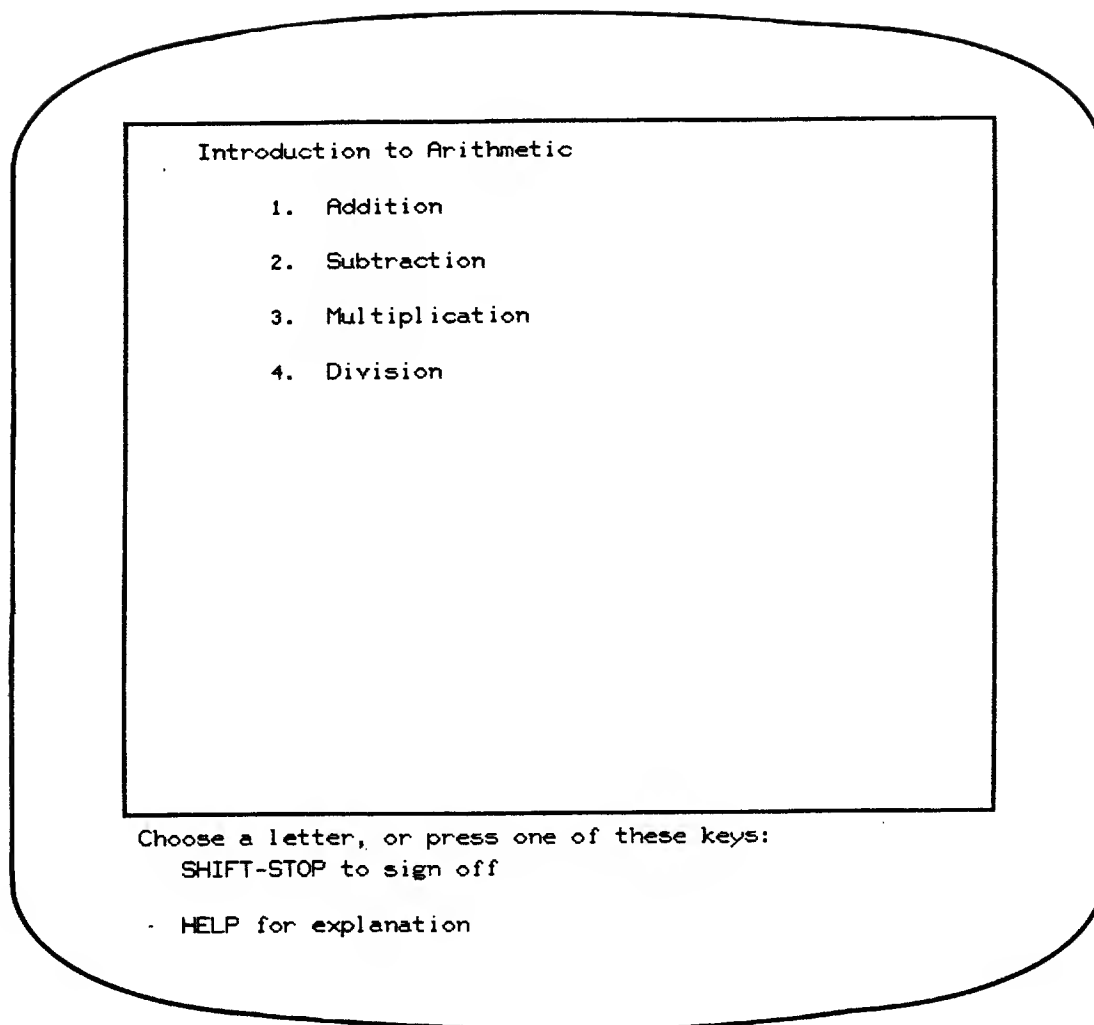
Figure 1-13. Sample Student Index

```
                        PLATO Facilities


          a.   Group operations (roster, statistics, etc.)
          b.   Datafiles
          c.   Account transactions

          d.   Choose a lesson to study

          e.   Notes

          f.   Interactive communications

          g.   Request a print

          h.   AIDS (information about PLATO and TUTOR)
          i.   PLMAIDS (information about the PLM system)

          >
     Type the letter (a-i) of one of the options above.


            Press HELP for more information.

            Press SHIFT-STOP to leave.
```

Figure 1-14. PLATO Facilities Display

```
                    AUTHOR MODE

                Choose a lesson:



                    >




                HELP available
```
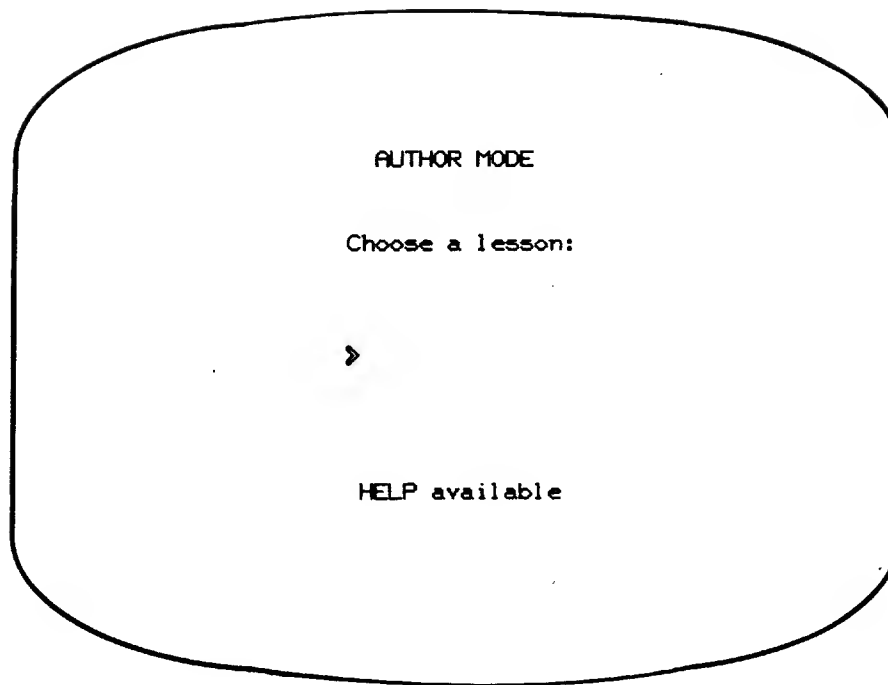
Figure 1-15. Author Mode Display

HOW ALL USERS SIGN OFF

You must sign off from the system after completing a session on the terminal to prevent unauthorized use of your sign-on and of records. To sign off from the system, press SHIFT-STOP (hold the SHIFT key down while pressing the STOP key) several times until the screen displays Press NEXT to begin. This is the only way to sign off from the system.

If you are using an IST-II or IST-III terminal, press SHIFT-STOP until Press NEXT to begin appears on the screen and then set the TALK/DATA switch to TALK.

If you have a dial-in connected terminal, hang up the telephone after you see the Press NEXT to begin message. Hanging up the telephone disconnects the terminal from the central computer but does not sign you off from the system.

> ### NOTE
>
> Turning off the terminal or hanging up the telephone does not sign you off from the system. Do not turn off the terminal or hang up the telephone until you see Press NEXT to begin.

The security of your records may be jeopardized if you do not sign off from the system before hanging up the telephone or setting the TALK/DATA switch to TALK. The PLATO system remembers what lesson or activity you were working on and connects your sign-on to the next person who dials into the system. (Some systems automatically sign you off from the system if you forget to sign off before disconnecting communication lines. However, because not all systems can do this, you should always make sure you properly sign off from the system before disconnecting communication lines.) If you forget and hang up the telephone or set the TALK/DATA switch to TALK before signing off from the system, quickly dial into the system and sign on again. If your lesson or activity appears on the screen, sign off and then hang up the telephone or set the TALK/DATA switch to TALK. If you see the message, Sorry, Records Already Being Used, press SHIFT-HELP (hold down the SHIFT key while pressing the HELP key). Then, press SHIFT-STOP (hold the SHIFT key down while pressing the STOP key) until you see Press NEXT to begin.

If you dial in to the terminal and another user's lesson or activity appears on your screen, that user has forgotten to sign off before hanging up the telephone. Press SHIFT-STOP (hold the SHIFT key down while pressing the STOP key) until you see Press NEXT to begin to sign the user off from the system. Then sign yourself on to the system by proceeding with the sign-on sequence.

HOW TO CHANGE YOUR PASSWORD

You can change your password any time you sign on to the PLATO system. You should change your password frequently to avoid the possibility of someone guessing your password and gaining access to your records. The following steps describe how to change your password.

1. Sign on to the PLATO system as you normally do, typing your PLATO name and PLATO group.

2. Type your old password and press LAB when the system displays the Password display (figure 1-11).

3. Press LAB again. The system displays the Password Choice display (figure 1-10).

4. Type your new password. Press NEXT.

5. Type your new password again to verify it and help you remember it. Press NEXT.

SECTION 2

USING STUDENT FEATURES

USING STUDENT FEATURES

This section presents an overview of the different types of curriculum structures available on the PLATO system, explains the kinds of activities students are frequently involved in, and defines and describes how to use the PLATO system features which are usually available to all user types.

All users should read the Introduction (section 1) before reading this section.

CURRICULUM STRUCTURES

PLATO lessons can be presented to students in various ways. Your instructor determines how your lessons are presented and also how much flexibility to give you while taking lessons. Most students are assigned a curriculum to study. A curriculum is a study plan which concentrates on a specific topic or subject. Curricula usually cover a broad subject area such as English, biology, and so on.

Curricula can be presented to students in different ways, depending upon the method of instructional delivery selected by your instructor. Some curricula are composed of several modules. A module is a group of lessons which relate to the same basic subject. Each lesson in the module presents instructional materials which concentrate on a different area or aspect of the module topic. The combined lessons and modules compose the curriculum (figure 2-1).
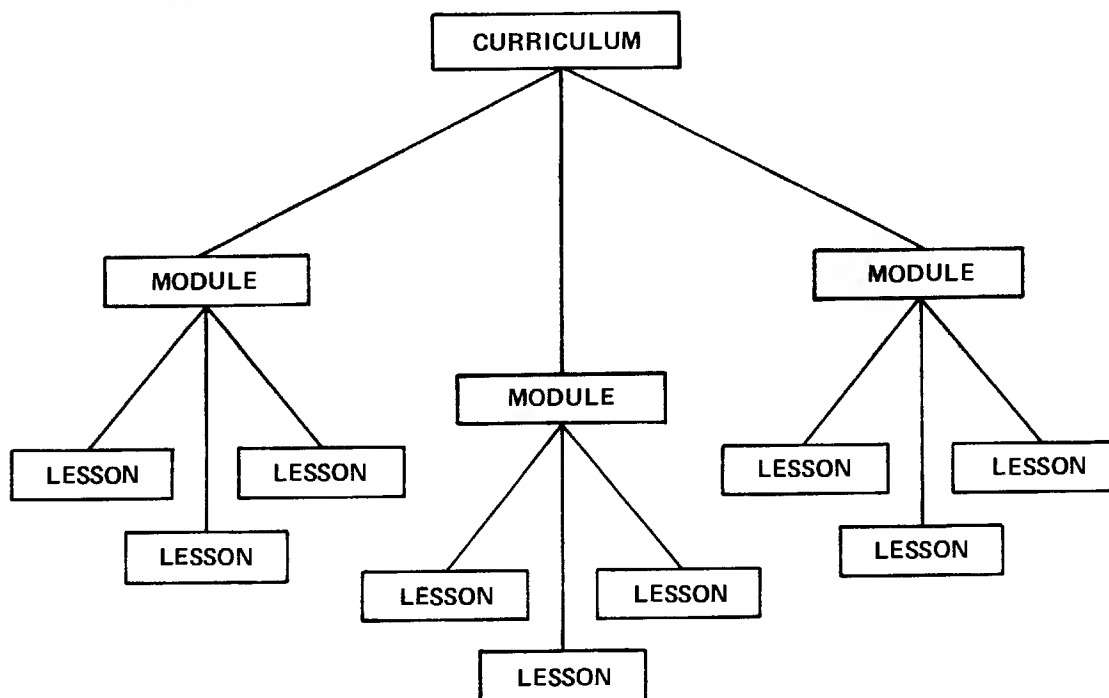
Figure 2-1. Curriculum Structure - Example 1

Other curricula are composed of several courses. A course is a complete learning package which concentrates on a specific topic or subject area of the curriculum. It contains modules which can present objectives, provide instructional lessons, administer tests, and suggest study materials related to the subject of the course (figure 2-2).

```
                        ┌──────────────────┐
                        │   CURRICULUM     │
                        └──────────────────┘
                         /                \
                        /                  \
              ┌──────────────┐      ┌──────────────┐
              │    COURSE    │      │    COURSE    │
              └──────────────┘      └──────────────┘
               /        \            /        \
     ┌──────────┐  ┌──────────┐ ┌──────────┐ ┌──────────┐
     │  MODULE  │  │  MODULE  │ │  MODULE  │ │  MODULE  │
     └──────────┘  └──────────┘ └──────────┘ └──────────┘
```

● Objectives	● Objectives	● Objectives	● Objectives
● Lessons	● Lessons	● Lessons	● Lessons
● Tests	● Tests	● Tests	● Tests
● Study materials	● Study materials	● Study materials	● Study materials
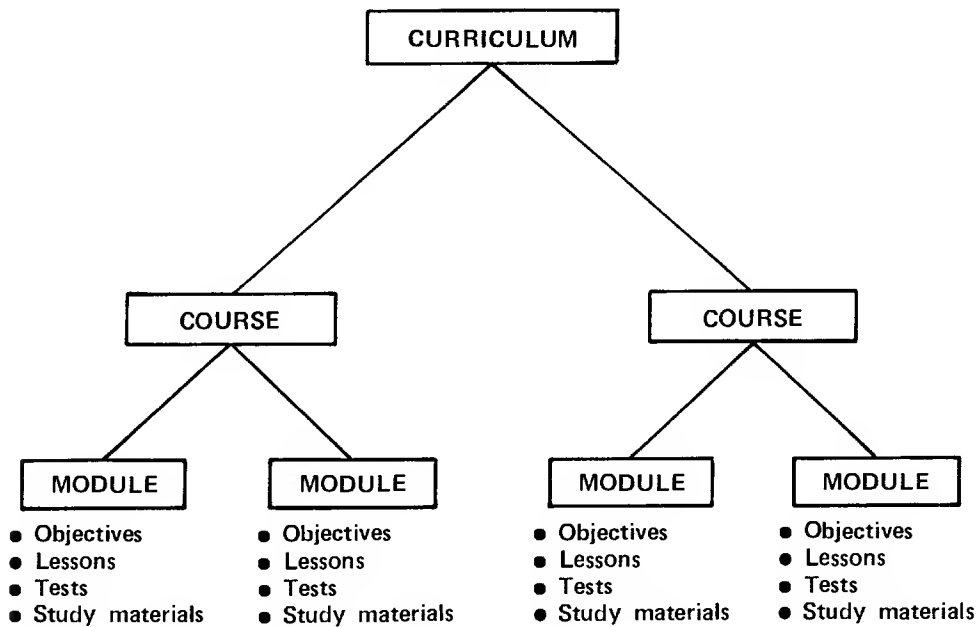
Figure 2-2. Curriculum Structure - Example 2

Most curricula are designed to meet the individual needs of students. Curricula can be designed to allow differing degrees of flexibility to students studying the curricula. Some curricula are designed to allow you to choose the order of the lessons you want to study, while others require you to study lessons according to a specified sequence. Some curricula allow you to take a test before studying a lesson. Usually, if you pass the test, you are not required to study the lesson. Taking a test before studying the lesson materials helps you know which parts of the lesson you should concentrate on more than others, and lets you preview the test questions. Many curricula include a statement of the objectives for the modules and lessons. These objectives help you get a better understanding of the purpose of the lesson and the information you are expected to know once you complete the course of study.

TAKING PLATO LESSONS

Before you begin studying lessons on the PLATO system, it is helpful to know what kinds of things you might be asked to do, or the kinds of things you might want to do.

Press NEXT when you finish reading the information displayed on your screen and are ready to see more information. Usually, the PLATO system reminds you to press NEXT when finished reading by displaying Press NEXT or NEXT at the bottom of the screen. Remember, whenever you are in doubt about what to do on the system, press NEXT.

Sometimes, the PLATO system asks you to answer a question by typing a response. The system tells you when it expects a typed response by displaying an arrow (>) on the screen. You can respond to a question in one of two ways. If the system provides a list of options to choose from, type the letter or number in front of the option. (Occasionally, the system requires you to press NEXT after you make your selection. If nothing happens after you type your selection from a list of options, press NEXT.) If the system does not provide a list of options to choose from, type your answer and press NEXT. You should always press NEXT after you type a response to a question that is not selected from a list of options.

Pressing BACK usually allows you to see displays you read previously in the lesson. Press BACK until you reach the display you want to see. To return to your original display, press NEXT until you reach the desired display.

Many PLATO lessons contain extra reading material to help you understand different parts of a lesson. Pressing HELP often displays useful reading material which can further explain a point or procedure described in the lesson. Press HELP if you need help understanding part of a lesson, if you are interested in seeing more detailed information about part of a lesson, or if you are unsure of what to do in a lesson. Usually, the system displays HELP or HELP available at the bottom of the screen to remind you help is available and to use the HELP key.

Some keys are used only occasionally in PLATO lessons. These keys are called function or branching keys and are used only if the author of the lesson programs them to work. Function keys can do a variety of things, depending upon what the lesson author programs them to do. Some keys provide lab exercises or problems for you to solve, some cause the display to partially or totally erase and add new information, and others branch you to a new series of displays which give more information about a specific subject. Whenever you use a function key, the PLATO system always returns you to the same place in your lesson from where you first pressed the function key. This prevents you from getting lost while taking a PLATO lesson. Most lessons tell you which function keys are available for you to use during your PLATO lesson. This information is usually given at the beginning of the lesson. Other times, individual displays state which keys are available for you to use. Traditional places to look to find which keys are available are the bottom two lines of the screen, often in the corners. The following keys are often used as function keys: LAB, DATA, SHIFT-NEXT, SHIFT-BACK, SHIFT-LAB, and SHIFT-DATA. Remember, keypresses which have a hyphen following the SHIFT notation (such as SHIFT-NEXT) require you to hold down the SHIFT key while pressing the function key.

UNDERSTANDING YOUR CURRICULUM

After you sign on to the PLATO system, your display resembles one of the displays in figure 2-3. Each curriculum has its own set of instructions on how to proceed through the lessons in it. Common locations for these instructions are the bottom corners of the screen. Find the display in the figure which most closely resembles your display and follow the instructions printed below it.

PLATO Learning Management

Contemporary Biology

```
Name ........ student                Session # 6
Group ....... bio1Ø1a

Today's date ...... November 6, 198Ø
Last date on ...... November 6, 198Ø
```

Welcome back!

Press NEXT to continue

Introduction to Arithmetic

1. Addition

2. Subtraction

3. Multiplication

4. Division

Choose a letter, or press one of these keys:
    SHIFT-STOP to sign off

HELP for explanation

Figure 2-3. Examples of PLM and Index/"mrouter" Lessons

INDEX AND "mrouter" LESSONS

An index display (figure 2-3) lists the lessons in your curriculum which your instructor selected for you to study. Occasionally, new lessons are added to the index as you complete other lessons. Depending upon how your instructor designs your curriculum, you can randomly choose lessons to study, choose lessons according to a specified sequence set by your instructor, or choose lessons according to a specified sequence and also review lessons previously studied.

PLATO LEARNING MANAGEMENT LESSONS

The PLM Curriculum Welcome display (figure 2-3) appears the first time you sign on to a curriculum using PLATO Learning Management (PLM). PLM is a system capability designed to direct you through the curriculum in an individualized manner. It presents tests covering learning objectives, selects learning resources for you to study, and keeps records of your performance.

PLM gives your instructor several options to choose from in designing your curriculum and also gives you, the student, a range of options to choose from while studying the curriculum. For example, you can see the objectives for each module before you begin working in it. You should read the objectives to see what material the test and learning materials cover. PLM allows you to decide when you want to study the materials and when you want to take a test. You should take a test before you study to find out which areas you need to study and receive an assignment for those areas. You can take tests both before and after you study the learning materials.

PLM curricula frequently give you a choice of learning materials to study. For example, you can choose to read a textbook, listen to an audiotape, view a videotape, or study a PLATO lesson to achieve one or more of the module objectives. Many curricula combine these and other types of learning materials for you to study. The types of learning materials available for you to study and the flexibility to choose one in favor of another depends upon your instructor and the design of your curriculum.

The PLATO system tells you how to proceed from one part of the curriculum to the next and explains what you have to do to master each part of the curriculum. You are shown how to see the objectives, take a test, begin a PLATO lesson, and see how well you are progressing through the curriculum.

The Course Options display (figure 2-4) shows those courses that make up your curriculum. You can choose to work in any course listed under the heading Courses You Can Work On Now. You pick a course to work in by typing its number and pressing NEXT.

The Module Options display (figure 2-5) shows the modules in your current course. You can work on any of the modules listed under Modules You Can Work On Now. Usually there is a small arrow pointing to the module recommended for study. Some modules may not be available initially, but will become available after you master one or more of the other modules in the course.

Some modules may be designated as optional modules. You may be required to master one or more of these modules in order to master the course, but you can choose which optional modules you want to work on. To work on a module, type its letter or type a number for any of the other options listed at the bottom of the page.

```
┌─────────────────────────────────────────────────────────┐
│                   Contemporary Biology                   │
└─────────────────────────────────────────────────────────┘
══════════════════════════════════════════════════════════

COURSES YOU CAN WORK ON:
───────────────────────────────────────────────────────────
 ┌──┐
 │1.│Introduction to Biological Concepts
 └──┘
  2. Survey of Plant Life
  3. Survey of Animal Life


THERE ARE 4 COURSES FOR YOU TO WORK ON LATER.




───────────────────────────────────────────────────────────



    WHICH COURSE DO YOU WANT TO WORK ON NOW?     ⟩ ┌────────┐
                                                   └────────┘

    a. See how well you're doing      c. Sign off

    b. Review instructions
```

Figure 2-4. PLM Course Options Display

```
┌─────────────────────────────────────────────────────┐
│                Survey of Plant Life                  │
│                                                       │
│       WHICH MODULE DO YOU WANT TO WORK ON NOW?        │
│  ┌────────────────────────────────────────────────┐  │
│  │  MODULES YOU CAN WORK ON NOW:                   │  │
│  │                                                 │  │
│  │  → a.  Demonstration                            │  │
│  │    b.  Populations II                           │  │
│  │    c.  attributes                               │  │
│  │    d.  Bill's Module                            │  │
│  │                                                 │  │
│  │                                                 │  │
│  │                                                 │  │
│  │                                                 │  │
│  └────────────────────────────────────────────────┘  │
│                                                       │
│    1. See how well you're doing   3. Review instructions │
│                                                       │
│    2. Work in a different course                      │
└─────────────────────────────────────────────────────┘
```
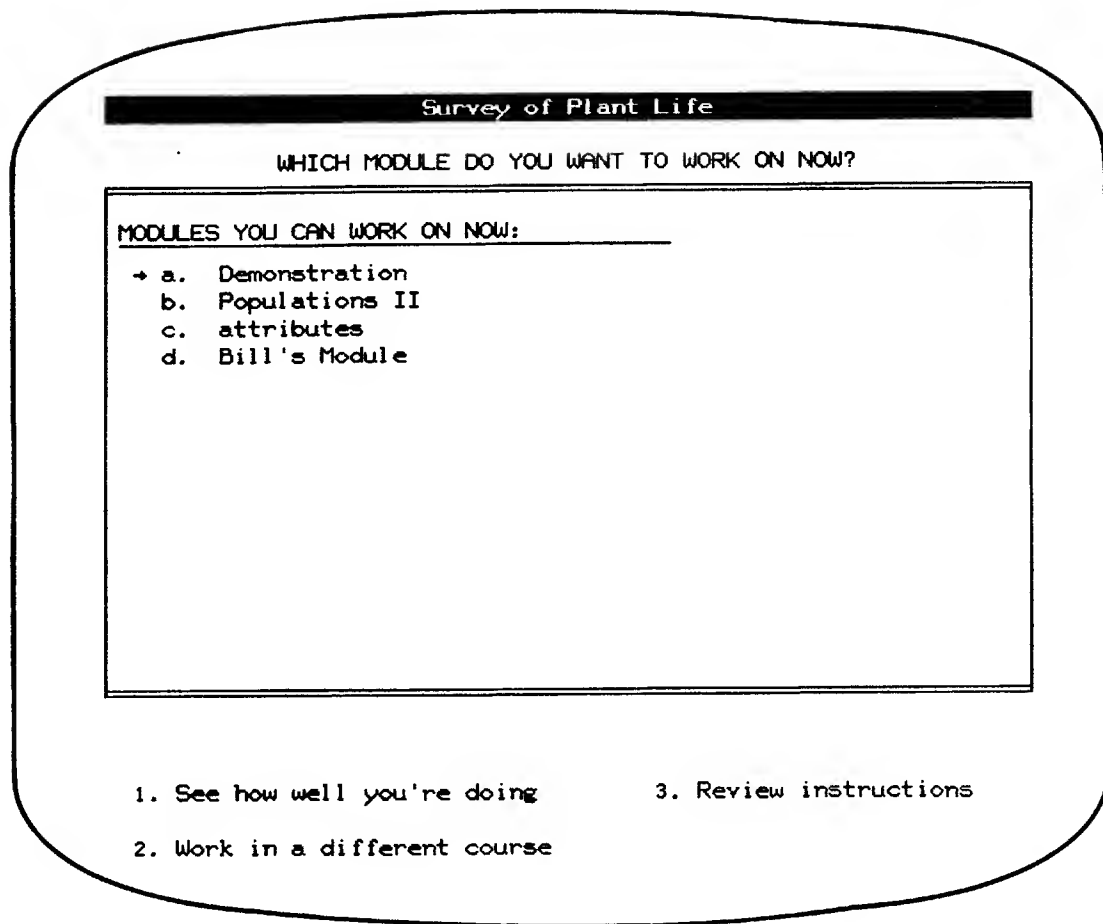
Figure 2-5. PLM Module Options Display

REQUESTING HELP

If you have questions or do not understand a procedure while using the PLATO system, you can request help. Two kinds of help are available to students using the PLATO system. These are: help within a lesson and help from your instructor.

HELP WITHIN A LESSON

Most lessons contain a standard set of helpful information which is available to all students studying the lesson. This information can describe a point or procedure in more detail than was explained in the main part of the lesson, give how-to information, provide definitions and formulas, review previous information, or give information on how to proceed in the lesson.

This type of helpful information is usually accessed by pressing HELP. The HELP key is the first key you should press when you have a question during a lesson. The HELP key is a programmable key, however, and only works if the author of the lesson programs it to work. (Most authors design their lessons to include the HELP key). The screen usually displays HELP available or HELP when the HELP key is working. Pressing HELP during your lesson usually causes one of three things to happen:

- Information can be added to your current display.

- Your current display can be erased and show new information.

- New information can be added to your current display as well as give you the option to see more information.

After you press HELP and additional information is displayed on your screen, the HELP sequence usually tells you which keys to press to proceed through the HELP sequence and return to the lesson. If no instructions are given, press NEXT to proceed. The lesson usually returns you to the display in the lesson where you initially requested help.

HELP FROM YOUR INSTRUCTOR

You can communicate with your instructor about questions or problems you have while using the PLATO system. You should request help if you do not understand what you are doing in a lesson or if you feel lost and do not know what to do next. Three ways to receive help from your instructor are: TERM-ask, student notes, and personal notes. The following describes each of these features and gives information on how to use them.

TERM-ask

TERM-ask allows you to request assistance from an instructor about a lesson you are studying while you are actually studying the lesson. It allows you to communicate with your instructor by typing messages back and forth on the bottom of your screen. The TERM-ask feature is not automatically available to all students. If your instructor arranges for your PLATO group to use TERM-ask, you can access the feature.

The following steps describe how to use TERM-ask.

Contacting Your Instructor

1. Press TERM (hold down the SHIFT key while pressing the TERM/ANS key). The system displays what term? >.

2. Type ask and press NEXT. One of the following messages is displayed.

    a. If you see the message Someone Has Been Notified, your instructor is available to answer your question and has been notified you called. You can continue your lesson while you wait for your instructor to contact you (it usually takes a few minutes for your instructor to reply).

b. If you see the message Sorry, No One Is Available, your instructor is not currently available to answer your question. In some cases, you are given the option to write a note to your instructor. If you want to write a note, follow the instructions in Commenting on Lessons, later in this section, for more information on how to write a note.

c. If you see the message Sorry, Your Group is not Prepared for TERM-ask, your instructor has not prepared your group to use the TERM-ask feature.

3. When your instructor contacts you, you see a message such as sally jones/teacher/minna also sees this display.

Communicating with Your Instructor

When your instructor contacts you, you can communicate by typing messages back and forth on the bottom of your screens. Your instructor can also monitor your screen and see the same information on his/her screen that you see on yours. (This eliminates the need for you to describe in detail where you are in the lesson and what problems you are having.)

The following steps describe how to communicate with your instructor.

1. When your instructor contacts you and you see a message such as sally jones/teacher/minna also sees this display, an arrow appears in the lower left corner of your screen. Any message your instructor types appears to the right of this arrow.

2. To communicate with your instructor, press TERM (hold down the SHIFT key and press the TERM/ANS key). A second arrow appears. Any message you type appears to the right of this arrow.

3. Type your message. Your instructor sees the message as you type it. If your message requires more than one line of typing, press LAB to clear the line and continue typing. The LAB key is the only key that allows you to continue typing. If you press a function key other than LAB (for example, BACK), the arrow disappears. If you accidentally press another function key and the arrow disappears, press TERM to recall the arrow and resume typing.

Showing Your Instructor Your Screen Display

Although your instructor can monitor your screen, your instructor cannot see the display you are looking at when she/he initially contacts you. If the display you want your instructor to see is the one you are looking at when your instructor contacts you, you need to replot your screen (replot means to move from one display to another).

The following steps describe how to replot your screen.

1. Do one of the following, depending upon the type of lesson you are using.

a. If you are using PLM, press DATA.

b. If you are taking an index lesson, either press BACK and then NEXT, or press HELP and then NEXT.

2. Press TERM to talk to your instructor while she/he monitors your screen.

3. To show your instructor a different display, press BACK to discontinue typing. Go to the new display and repeat step 2.

Ending TERM-ask

When your questions are answered and you do not want further help, type thanks or bye. (Remember to press the TERM key to type messages.) Your instructor ends the communication. The system displays a message telling you TERM-ask is over.

Student Notes

Student notes are part of a special notes system which allows you to read and write notes to your instructor, group members, and other system users. Your instructor determines whether you can use the notes feature and also which options you can use. Your instructor allows you to write and receive notes, write notes only, or receive notes only. Your instructor also determines with whom you can communicate (for example, group members, all system users, or just your instructor). To find out if you have access to the student notes feature, look at your lesson index. You have access if notes is one of the options listed, or if a function key is designated as a notes option. If nothing is listed, your instructor has not arranged for you to use student notes.

You should write a student note to your instructor if you have a comment or a question about the lesson you are taking, or to respond to a note written to you. The following steps describe how to read and write student notes.

1. If notes are listed as an option, either type the letter in front of the option or press the designated function key associated with the option.

2. Do one of the following, depending upon the kind of activity you want to do.

    a. Press NEXT to read your notes.

    b. Press SHIFT-LAB to write a note. Go to step 3.

    c. Press BACK to return to the index.

    If your instructor sends you a note, the system tells you there are notes you have not read.

3. After you press SHIFT-LAB, the system displays a rectangular box with an arrow in the upper left corner. Directions for writing a note are listed under the box. Press HELP for information on how to write notes.

Personal Notes

Personal notes are private notes between individuals on the system. You can write personal notes to or receive personal notes from any user whose group is prepared to receive notes, provided your instructor has granted you a personal notes option. To find out if you can use the personal notes feature, look at your lesson index. You can access personal notes if personal notes is one of the options listed, or if a function key is designated as a personal notes option. If nothing is listed, your instructor has not arranged for you to use personal notes.

The following steps describe how to write personal notes.

1. Follow the instructions on your lesson index to access personal notes. (Function keys and lesson selections vary with different curricula.) The system displays the Personal Notes display (figure 2-6).

2. Type the name of the person to whom you want to send a personal note. Press NEXT.

3. Type the name of the group in which the user is registered. Press NEXT.

4. Type the name of the PLATO system in which the user is registered (for example, minna, minnb, minnc, and so on). Press NEXT. If the user is registered in the same PLATO system as you, press NEXT before typing the system name. Your system is automatically recorded. (The name of your PLATO system is on the Welcome display.) The system displays the Personal Notes Text display (figure 2-7).

5. Read the instructions printed at the bottom of the display. Press HELP for more information on how to write notes.

Refer to Using Personal Notes in section 4 for more information on reading and writing personal notes.

Figure 2-6. Personal Notes Display

```
Personal note to  mary smith / medicine / minnc

>

Press:

NEXT   for the next line      SHIFT-NEXT   when finished
BACK   for the previous line  SHIFT-BACK   to exit and not send
EDIT   to change the line     SHIFT-LAB    to insert a line
HELP   for more directions    SHIFT-HELP   to delete lines
```
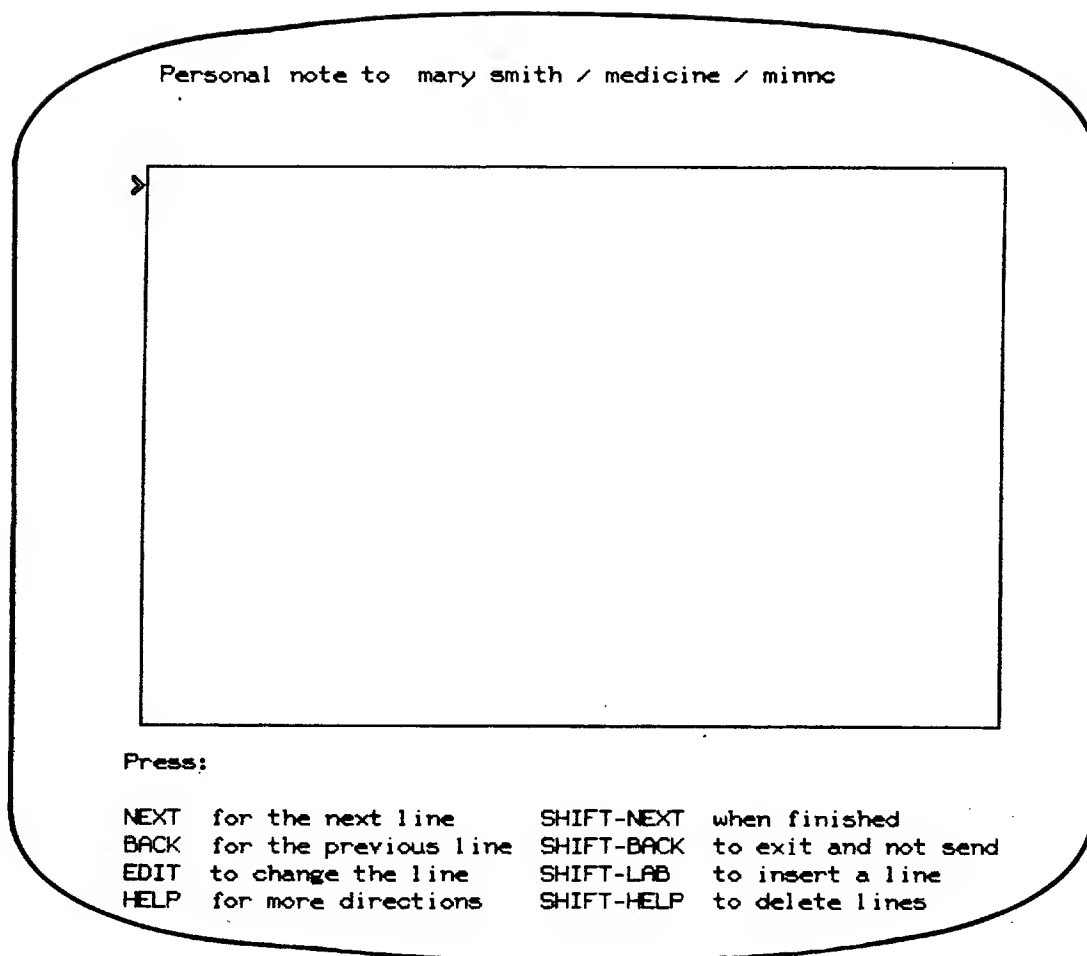
Figure 2-7. Personal Notes Text Display

COMMENTING ON LESSONS (TERM-comment)

You can comment on a lesson you are taking by using the TERM-comment feature. TERM-comment allows you to comment on a lesson and send the comment to the lesson author (your instructor can also receive the comment). Some reasons to comment on a lesson are: unclear instructions, confusing explanations, incorrect answers or information, and so on. Write a comment about areas in a lesson which you do not understand or find confusing, to ask for a clarification of a technical point, or to start a discussion. Keep your comments brief but be specific. The following steps describe how to use TERM-comment.

1. Press TERM (hold the SHIFT key down while pressing the TERM/ANS key). The system displays what term? > .

2. Type comment and press NEXT. The system responds with a message saying your comment will be sent to the lesson author or your instructor. A line appears at the bottom of the screen with an arrow below it on the left side. Some instructions are below the line.

3. Press HELP for more information on using TERM-comment.

4. Type your message. Press NEXT at the end of each line to continue typing. The maximum length of a comment is usually 20 lines.

5. Press BACK to read or correct lines previously typed. Continue pressing BACK until the line you want to read or change appears to the right of the arrow. Use the ERASE and EDIT keys to make your corrections (refer to appendix A for information on how to use the ERASE and EDIT keys).

    a. If your comment is completed after making your corrections, go to step 6.

    b. If you want to continue typing after making your corrections, press NEXT repeatedly until you return to the last line of your comment. Finish typing your comment and go to step 6.

6. Press SHIFT-NEXT to send the comment to the lesson author, or press SHIFT-BACK to cancel the comment.

COMMUNICATING WITH GROUP MEMBERS

As a student, you can communicate with other members in your group, other groups, or all users on the system through general notes. General notes are a collection of notes written by members of a defined community about a particular subject. The notes are grouped into sets. Each set concentrates on a specific topic and is identified by a name. General notes allow group members to share and exchange ideas and comments about specific topics or subjects of interest.

Not all general notes can be read or responded to by all users, however. Many directors of notes restrict the access to notes to certain PLATO groups only. Some directors allow you to read and write notes, but others allow you to do only one or the other. The system allows you to see only the notes you can access.

Your instructor can tell you which general notes, if any, you can access. The notes option appears on your lesson index if you can access one or more general notes. To learn how to access and participate in general notes, refer to Using General Notes in section 4.

HANDLING PROBLEMS

Occasionally, problems might occur while you are using the PLATO system. Common problems are distorted screen displays, lines across the screen, or random letters or symbols displayed on the screen. Most of these problems are minor and can be easily corrected by you. The following describes the different types of problems you might experience (infrequently) while using the PLATO system. Table 2-1 provides a list of suggested ways to solve problems.

TABLE 2-1. TROUBLESHOOTING PROCEDURES

Problem	Solution
Telephone rings, but you get a busy signal or no answer.	1. Hang up and try again. 2. Call PLATO hot line.[†]
Terminal writing appears upside down, backwards, and so on.	1. Press either MASTER-CLEAR button or RESET switch briefly.
Red ERROR (ERR) light goes on and you get no response from typing or touching the screen.	1. Press STOP key until light goes off. 2. Press either MASTER-CLEAR button or RESET switch briefly. 3. Hang up and redial. 4. Call the PLATO hot line.[†]
Red ERROR (ERR) light goes on frequently, causing screen display errors.	1. Hang up, wait 5 minutes, and redial. 2. Call the PLATO hot line.[†]
PLATO OFF message appears on screen.	1. Wait for one of these messages: a. Press NEXT to begin. b. PLATO will return in 5-10 minutes. c. PLATO will return at___hours Central Time.
PLATO not available message appears on screen.	1. This message is occasionally seen at night and indicates that routine maintenance is being done.

[†] The PLATO hot line number is 1-800-328-9114 or 612-482-2006 (Minnesota only).

If you call the hot line, give the staff person on duty the following information:

- Your name and location.
- Your dial up number.
- A description of your problem.

COMMUNICATION ERRORS

Communication errors result when there is interference on the communication lines between the central computer and your PLATO terminal. These are usually minor problems which you can correct. When a communication error occurs, the display on your screen is often distorted. Sometimes lines may be drawn across the screen, sentences may be upside down or sideways, or text may be written backwards. Usually, the ERROR (ERR) indicator lights when there is a communication error. To correct the error and clear the communication lines, press STOP. If the problem persists after you press STOP one or two times, do the following.

- Press the MASTER CLEAR button or RESET switch. This clears both the communication lines and your screen. When your screen clears, it is blank. Press DATA or BACK to return to your lesson.

- Press SHIFT-STOP if the problem persists after you press MASTER CLEAR or RESET. In addition to clearing the communication lines, SHIFT-STOP can also sign you out of your lesson or off from the system. If you sign off while clearing the communication lines, sign on again and continue your lesson.

Communication errors can also cause graphic displays to be distorted. Graphic displays are usually pictures, animated characters, boxes or lines around text, or extra large or small printing. If a graphics display does not look right (lines appear across text, figures drawn over text, upside down letters, and so on), press the TERM key (hold the SHIFT key down and press the TERM/ANS key), type charset, and press NEXT.

LESSON EXECUTION ERRORS

Lesson execution errors occur when the author of a lesson does not design the lesson to accommodate every response or keypress you might select. Because PLATO lessons are so flexible and offer many options to you as a student, the author of your lesson might not anticipate or plan for all the responses or keypresses you might choose. When you ask the system to do something which the author of the lesson did not think you might do, a lesson execution error might occur.

When a lesson execution error occurs, the system displays a lesson execution error message. This message tells you a lesson execution error has occurred and gives some information on the place in the lesson where the error occurred. When the system displays the lesson execution error message, it gives you the option of writing a note to the lesson author. You can help the lesson author determine how to correct the problem by recalling what happened right before the lesson execution error occurred. For example, state which key(s) you pressed, the response you typed, or anything unusual you did or noticed.

This information helps the author find the problem and correct it quickly. The following steps describe how to write a note to the lesson author after a lesson execution error occurs.

1. At the bottom of the lesson execution error message, find the line with an arrow below it on the left side. Read the instructions printed below the line.

2. Press HELP for additional instructions.

3. Type your note. Press NEXT at the end of each line to continue typing.

4. Press BACK to reread or correct lines previously typed. Continue pressing BACK until the line you want to read or change appears to the right of the arrow. Use the ERASE and EDIT keys to make your corrections.

   a. If your note is finished after making your corrections, go to step 5.

   b. If you want to continue typing after making your corrections, press NEXT repeatedly until you return to the last line of your note. Finish typing your note and go to step 5.

5. Press SHIFT-NEXT to send the note to the lesson author, or press SHIFT-BACK to cancel the note.

MESSAGES YOU MIGHT RECEIVE

Sometimes problems can occur within the PLATO system which cause the system to stop working. These system problems are called crashes. When the system crashes, the system stops working and displays a message indicating the system is off. If you are using a terminal when the system crashes, the lesson or activity you are working on stops and the system ignores all keyboard input. A PLATO Off sign appears at the top of your screen. A few minutes later, the screen erases and the PLATO Down display appears. The PLATO Down display usually tells you what time the system is expected to be working again.

Whenever the PLATO system is down, you do not have to sign off from the system. The system automatically signs off all users when it crashes. This is the only time you do not have to sign off from the system after you have signed on.

If the PLATO system is temporarily unavailable, a message is displayed which usually indicates what time PLATO services are scheduled to resume.

HELPFUL TOOLS

Some PLATO system features are similar to reference materials. These features can perform mathematical calculations or tell you the correct time of day and the current date. Students can use these features any time they are using the PLATO system. Occasionally, an author may inhibit these features from working in a particular lesson. For example, the feature that calculates mathematical expressions is usually turned off in math lessons. The following paragraphs describe these features and how to use them.

CHECKING THE TIME

You can request to see the current time and date by using the TERM-time feature. TERM-time displays the current time and the day, month, and year. To use TERM-time, follow these steps.

1. Press TERM (hold the SHIFT key down while pressing the TERM/ANS key). The system displays What term? > .

2. Type time and press NEXT. The system responds by displaying the current time and date at the bottom of the screen.

DOING MATHEMATICAL CALCULATIONS

You can use the PLATO system to do mathematical calculations by using the TERM-calc feature. TERM-calc allows you to present mathematical problems or equations for the system to solve.

You need to understand how the PLATO system solves mathematical equations before using the TERM-calc feature in order to set up your equations correctly and prevent the system from misunderstanding your equation. The rules for mathematical equations are basically those of ordinary arithmetic. The order of operations from first to last is:

1. Exponentiation.

2. Multiplication.

3. Division.

4. Addition and subtraction.

All equations are solved in this order.

Use parentheses liberally when writing your equations to make your expressions clear. For example, 6-2x3 is read by the PLATO system as 6-(2x3) instead of (6-2)x3, since multiplication is done before division. Parentheses ensure your equation is interpreted correctly.

The function keys on the left of the keyboard contain the four operations: x, /, +, - (multiply, divide, add, and subtract, respectively). An asterisk (*) is equivalent to x and a slash (/) is equivalent to ÷. Exponentiation is indicated with two asterisks (3**2=9) or superscripts ($2^2*4=16$). Use the SUPER key to type one superscript at a time and SHIFT-SUPER to type more than one superscript at a time. Press SHIFT-SUB to return to the normal typing line.

To use TERM-calc, follow these steps.

1. Press TERM (hold down the SHIFT key while pressing the TERM/ANS key). The system displays What term? > .

2. Type calc and press NEXT. The system displays an arrow at the bottom of the screen.

3. Type your calculation but do not include an equal (=) sign. Press NEXT. For example, (250 + 250) - 250 NEXT. The system gives the correct answer (for example, 250).

4. Press NEXT to enter another expression.

5. Press BACK to return to your previous activity.

To learn more about TERM-calc, study the on-line PLATO lesson "ȼtermcalc".

ADDITIONAL STUDENT OPTIONS

Not all users with student sign-ons study curricular materials. Some users are assigned student sign-ons for direct access to specific system features. The following defines some of the features available to this type of student user and references the sections of the manual which contain detailed information about the feature.

Documentor

Documentor is a utility on the PLATO system which can be used as a tool for organizing, editing, and presenting text-oriented information. Refer to Using Documentor in section 4 for more information about documentor.

Catalog of Available Courseware

The Catalog of Available Courseware is a reference catalog which contains a listing of all published PLATO lessons. Refer to Using the Catalog of Available Courseware in section 4 for more information on this feature.

Print Requests

This feature allows you to request a print of a file on the PLATO system, check the status of a request previously made, and check the availability of the line printer. Refer to Requesting Prints in section 4 for more information on this feature.

On-Line Author Listing

This feature allows you to see a listing of all authors on the PLATO system and biographical information about them. Refer to Using the On-Line Author Listing in section 4 for more information about this feature.

USING THE MICRO PLATO SYSTEM

NOTE

The following information is directed toward students who are studying lessons using the Micro PLATO system.

The Micro PLATO system is an easy and uncomplicated system to use. It is similar to using the central PLATO system in that the keyboard functions the same and lesson use is the same (directions are provided to guide you through the lessons). Although the two systems have some similarities, they also have some differences. Unlike the central PLATO system, the Micro PLATO system does not always require you to sign on or identify yourself before seeing lessons on the terminal. Lessons are contained on flexible disks and different lessons often have different requirements. Some lessons may require you to sign on before using the system, while others will simply present the lessons. (Usually, if you are required to sign on, it means information is being collected about your performance or use of the lesson; for example, if you are taking a test).

An index will usually be displayed which contains titles of lessons and possibly several options to choose from. Because each lesson is unique, its structure or form of presentation may differ from other lessons. However, as with using the central PLATO system, the lesson instructs you on how to proceed through the lesson.

Some lessons may require you to take a test on the material presented. Usually, testing is done using the central PLATO system since that system can collect and store data (such as test scores for large numbers of students). Your lesson or other instructional materials will instruct you as to whether or not you need to sign on to the central PLATO system to take a test or participate in another activity. (Refer to How All Users Sign On in section 1 for information on how to sign on to the central PLATO system.)

Because the Micro PLATO system is not connected to the central PLATO system and uses lessons which are contained on flexible disks, several features which are available on the central PLATO system are not available on the Micro PLATO system. Some of these features include TERMS (TERM-ask, TERM-calc, and so on) and notes.

SECTION 3

USING INSTRUCTOR FEATURES

USING INSTRUCTOR FEATURES

USING INSTRUCTOR FEATURES 3

This section presents an overview of the functions of an instructor and defines and describes the PLATO system features available primarily to instructors. All users should read the Introduction (section 1) and Using Student Features (section 2) before reading this section.

INTRODUCTION

An instructor using the PLATO system has responsibilities similar to those of an instructor in a conventional school setting. Instructors using the PLATO system create class rosters by registering students in a group, review PLATO lessons for applicability and content, choose and assign lessons for students to study, arrange lessons into curricula or assign published curricula, select appropriate instructional management tools, monitor the progress of each student and the class as a whole, and answer students questions as they proceed through the learning material.

PLATO FACILITIES DISPLAY

As an instructor, the first display you see after signing on to the PLATO sytem is the PLATO Facilities display. This display is your navigational tool on the system. All the system resources you need can be reached from this display. The PLATO Facilities display routes you to displays where administrative tasks can be performed.

The complete PLATO Facilities display consists of nine options. Not all instructors have all nine options available to them. Only the options which are assigned to you appear on your PLATO Facilities display. Your account director determines which options are most applicable to the tasks you need to perform on the system and assigns those options to you. Some users have subsets of or limited access to some selected instructor features and options. This type of user is typically a training coordinator, administrator, teaching assistant, or someone assisting an instructor or training director in some capacity. Consult your account director to add needed options to your display. The nine PLATO Facilities display options are shown in figure 3-1.

```
                    PLATO Facilities


         a.   Group operations (roster, statistics, etc.)
         b.   Datafiles
         c.   Account transactions

         d.   Choose a lesson to study

         e.   Notes

         f.   Interactive communications

         g.   Request a print

         h.   AIDS (information about PLATO and TUTOR)
         i.   PLMAIDS (information about the PLM system)

         >
      Type the letter (a-i) of one of the options above.


            Press HELP for more information.

             Press SHIFT-STOP to leave.
```
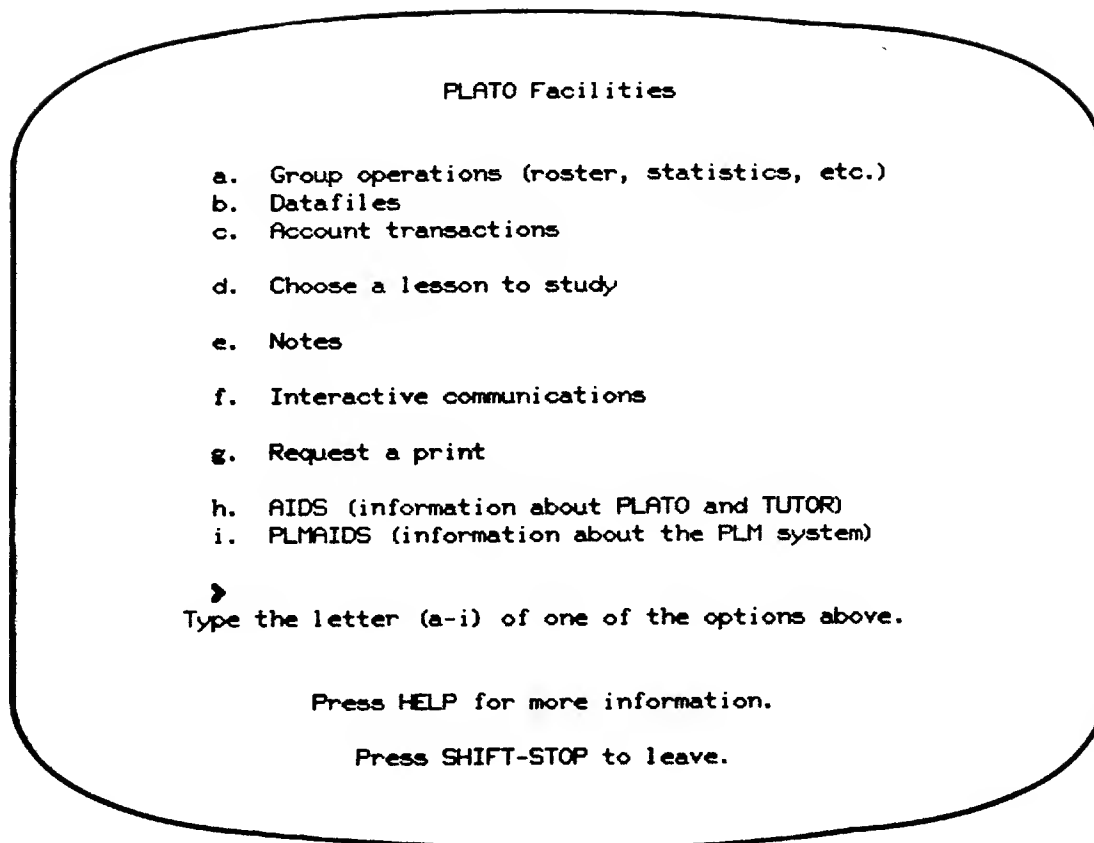
Figure 3-1. PLATO Facilities Display

Each of the nine options on the PLATO Facilities display allows you to access different system features and do different things. The following briefly describes the general types of functions associated with each option.

Group Operations

This option allows you to perform group management tasks. You can enroll students in or delete students from a group, see and change individual student and group records, leave messages for students, and assign lessons to students with this option.

Datafiles

This option allows you to collect and examine supplemental data (usually formative in nature) on lessons in your curriculum which have been coded to allow data collection. Some examples of the kinds of data you can examine are: student requests for help; answers students gave to questions in a lesson (both correct and incorrect); and information on lesson execution errors.

Account Transactions

This option allows you to see what files are in an account (a named file on a PLATO system through which all contracted PLATO resources are managed by a designated account owner or designee), add files to or delete files from the account, look at statistics on lessons, inspect the log of account transactions, see what users in the account are signed on to the PLATO system, and create files.

Choose a Lesson to Study

This option allows you to study a PLATO lesson as a student, as well as access on-line reference materials.

Notes

This option allows you to communicate with other users on the PLATO system through notes. You can write personal notes to and receive notes from other PLATO system users. You can also read notes from systems personnel regarding the current status of the PLATO system, as well as read, write, and respond to notes in general notes files. This option also allows you to write notes to and receive notes from students in your group.

Interactive Communications

This option allows you to see a list of people currently using the PLATO system, talk to someone by using the TERM-talk feature, set your TERM-talk feature options, and respond to requests for help from students or others using TERM-ask.

Request a Print

This option allows you to request prints of files (lessons, notes, and so on). You can also check the status of a print request previously made and check the status of the printer.

AIDS

This option allows you to access the on-line reference manual for the PLATO system. AIDS contains helpful reference information on PLATO system features for both authors and instructors.

PLM AIDS

This option allows you to access the on-line reference manual for PLATO Learning Management (PLM). PLM AIDS contains helpful reference information on PLM features for both authors and instructors.

To select an option on the PLATO Facilities display, type the letter in front of the desired option (for example, to look at the first option type the letter a). The system then shows you a new display giving you more detail about that option or a list of other options. Whenever you have selected an option from the PLATO Facilities display, you can usually return to the PLATO Facilities display by pressing BACK.

USING AIDS

AIDS is an on-line reference manual for authors and instructors. It contains definitions and explanations of most of the PLATO system features and all of the PLATO Author Language commands. AIDS contains more than 100 lessons which collectively form a complete reference manual for the PLATO Author Language and system features. Authors and instructors frequently use AIDS as a reference tool when using the PLATO system. The following are examples of the kind of information available in AIDS.

- List of indexes in AIDS.

- Definitions of PLATO system terminology.

- Descriptions of PLATO system features and lessons.

- Names and descriptions of useful lessons.

- Information on PLATO publications

- Suggestions on writing, testing, and evaluating lessons.

Users should refer to AIDS whenever they need more information about a specific feature. To use AIDS, choose the AIDS option from the PLATO Facilities display by typing the letter in front of AIDS. The system displays the AIDS Title display (figure 3-2). From the AIDS Title display, you can do one of three things, depending upon your needs.

- Press HELP for more information on AIDS and how to use it.

- Press NEXT for the AIDS Index (figure 3-3). The AIDS Index consists of two displays (press NEXT for the second display, BACK to return to the first) that function like a table of contents. It presents a general overview of the information covered in AIDS. Choose an option which generally covers the information you want to see by typing the letter in front of the option. The system either displays the information or a second, more detailed, index.

  Press HELP for more information on how to use the AIDS Index.

- Press DATA to bypass the index and see a display which allows you to request information on a specific command or feature (figure 3-4). Type the name of the command or system feature on which you want information and press NEXT. The system displays the information.

  For a quick reference, you can press DATA from anywhere in AIDS, see the What TUTOR Feature display, and request information.

  Press HELP from the What TUTOR Feature display for more information on how to use this display.

```
 A   I   D   S


        Elaine Avner, Darlene Chirolas,
         Celia Davis, Jim Ghesquiere,
          Tina Gunsalus, Jim Kraatz
             and Judy Sherwood

           PSO Author Group -- CERL
           Univ of Illinois, Urbana




     Press HELP if this is your first time in lesson AIDS




  © Copyright, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980
       Board of Trustees of the University of Illinois
     ┌─────────────────────────────────────────────────┐
     │ NO portion of the AIDS lessons may be reproduced │
     │ in any form without permission from the authors. │
     └─────────────────────────────────────────────────┘
       1241 features requested per day for the last 600 days
```

Figure 3-2. AIDS Title Display

Press a letter; or press NEXT for page 2   page 1
                                                             of 2

    a   Aids for new authors

    b   How to use AIDS

    c   Author Resources

    d   Alphabetical list of TUTOR commands

    e   Functional lists of TUTOR commands

    f   List of Indexes in AIDS

    g   Lists of System Defined Variables, Keynames,
        Functions, Logical & Bit Operators, -specs- Tags

    h   Making Displays

    i   Making Graphs & Charts

    j   Calculations and Variables

    k   Conditional Operations

    l   Sequencing

    m   Judging

    n   Execution of TUTOR

SHIFT-BACK always returns you to an index display.
HELP, DATA, BACK, SHIFT-NEXT are always available.

Figure 3-3. AIDS Index Display (Sheet 1 of 2)

Press a letter; or press NEXT for page 1

o   The PLATO Computer

p   Special Characters: ACCESS Characters, Linesets,
    FONT Characters (Character Sets), & MICRO Keys

q   Student Data, Instructor Options, & Routers

r   Keynames, Keycodes, and Internal Codes

s   Programming Errors and Condense, Lesson, &
    Execution Errors

t   Library of Author Routines

u   Microfiche and Photographing the Plasma Panel

v   Systematic Lesson Design

w   The Programmable Terminal (PPTs & ISTs)

SHIFT-BACK always returns you to an index display.
HELP, DATA, BACK, SHIFT-NEXT are always available.

Figure 3-3. AIDS Index Display (Sheet 2 of 2)

```
                              AIDS




        What TUTOR feature?    ⟩




              HELP      for help on how to use AIDS

         SHIFT-BACK   for Main AIDS Index

         SHIFT-DATA   to make a comment about AIDS
```
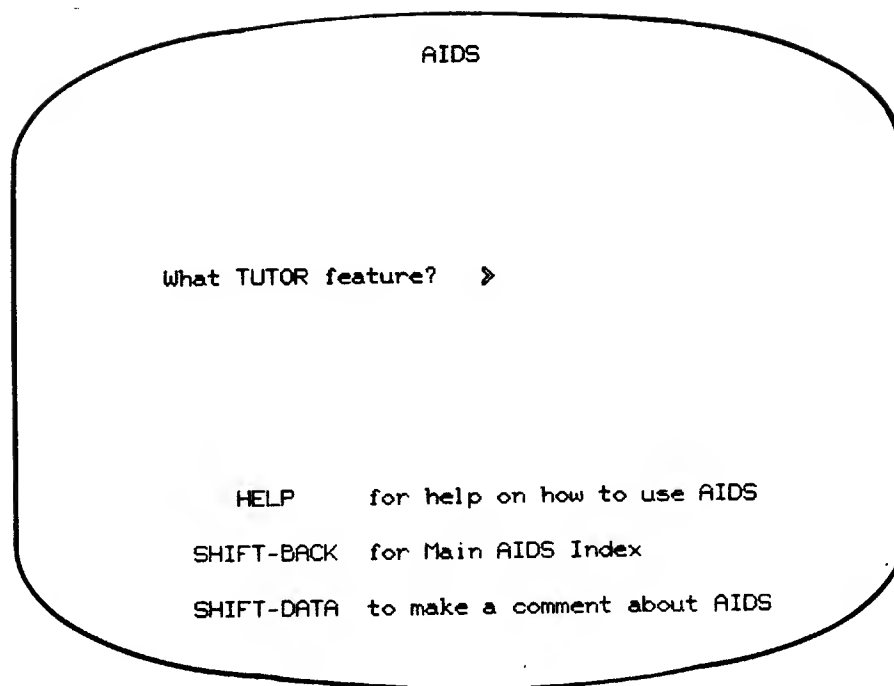
Figure 3-4. AIDS What TUTOR Feature Display

The following are some suggested topics for new instructors to refer to in AIDS to familiarize themselves with some system features and instructor responsibilities.

- groups

- curriculum design

- courseware catalog

- notes

- term-ask

THE PLATO GROUP

The primary working tool of an instructor using the PLATO system is the PLATO group. This section defines the PLATO group, explains its functions and the information it contains, lists the operations that can be performed within the group, and gives step-by-step instructions on group operations.

A PLATO group consists of a set of users who share something in common in their involvement with the PLATO system. For example, users who are studying the same course or curriculum, writing lessons for the same course or organization, or involved in the same project might be members of the same group. Each of these users is registered with the system in the same file. (A file is a finite set of data. The space within the computer system which stores this data is called file space. A file space is a defined, finite subset of a file.) Instructors use the group file to perform two major functions: student enrollment and monitoring; and curriculum design and management. The group file contains general information about the group and records for each of the users in the group.

A group file must be created before users can be enrolled in a group. To create a group file, an instructor contacts the account director of his/her account and requests that a group file be created. (Some instructors can edit their accounts and therefore can create the files they need themselves.) Creating a group file involves acquiring the needed file space and imposing safeguards against misuse of the space and its eventual contents. Once this is done, the instructor can begin enrolling the group members in the group file.

As an instructor, there are a number of administrative procedures you can perform concerning your group. You can register someone in the group, delete someone from the group, see a list of all group members, leave a message for one or more group members, see a list of all group members currently using the system, change or clear a student's password if she/he has forgotten it, and see statistical information of group members on an individual or group basis.

To see information on an individual student, you need to refer to that individual group member's user record. The system maintains a user record for each person enrolled in the group. Each record varies according to which user category the group member belongs (for example, student, author, instructor, multiple), although some information is the same for all user categories. User records contain such information as: user's name, date user last used the system, number of days user has signed on, and user category. In addition to providing information, the user record allows the instructor to change the record, leave a message to the user, change a course of study, or see the lessons the user is completing.

GROUP DATA

Information about your group is contained in the Group DATA (Directory) display (figure 3-5). From the Group DATA (Directory) display, you can see general information about the group file, a listing of other files associated with your group file, and information about the kinds of security codes required to use the group file. This information can be accessed from one of three options on the Group DATA (Directory) display – Group Information, Associated Files, or Security Codes.

```
    Group name ------ medicine (1 part)   Disk pack -- caemast
    Starting date --- Ø9/19/8Ø            Account ---- cbedd

    Last edited ----- Ø9/19/8Ø 12.57.26
             by ----- jean price of adev
             at ----- 1-15
    last action ----- Change group codeword



        Type the appropriate letter: ≫


            a.  Group information

            b.  Associated files

            c.  Security codewords




                    HELP available
```

Figure 3-5. Group DATA (Directory) Display

To reach the Group DATA (Directory) display, choose the Group Operations option from the PLATO Facilities display by typing the letter in front of the option and then press DATA. The following describes the three options available on the Group DATA (Directory) display.

General Group Information

This option contains general information relating to the group. The information includes the name of the person responsible for the group file, the general kinds of users who are registered in the group, and a short description of the purpose of the group.

To enter or change general group information, type the number in front of the information to be changed. Type the information and press NEXT. Identifying the group owner and audience is particularly important whenever more than one person can edit an account. Proper identification of the group owner, audience, and purpose of the file can prevent accidental deletion of the file by an account director.

Associated Files

This option allows you to identify other files your group uses or relies upon. Associated files can set up routers for your curriculum, allow students to write comments about lessons, allow students to write personal notes, and so on. Some examples of the kinds of files you might use with your group file are:

Student notes file	A file in which students write notes to the instructor or comment on lessons they are studying.
Datafile	A file instructors can use to see data collected on lessons and the curriculum. It is usually used for formative evaluation purposes.
TERM-ask group	A group identified as containing sign-ons of authors and/or instructors who are available to answer questions of students whose records reside in the group being edited/inspected.
Processor lesson	A user-written editor to be used instead of the standard PLATO system group editor. (An editor is simply a lesson used to insert, change, or inspect information. The PLATO group is an editor because it is a lesson used to create, inspect, or change information about students. The options in the PLATO group editor are a general set, anticipated to be needed by most system users. When more flexibility than the standard PLATO group editor can provide is required, a special editor can be written. This lesson is identified as the processor lesson because it is used to process the group's data. Most instructors will never need to designate a processor lesson.)
Router	A file that controls lesson sequencing and lesson selection and generally directs decisions regarding a student's progress through a curriculum. Either the PLATO system router, "mrouter", or PLM (PLATO Learning Management), can be used or a new router can be developed to meet a particular set of curriculum needs.
Instructor file	A file that contains curriculum design and course catalog information. An instructor file is used only if the group uses the PLATO system router, "mrouter"; otherwise, the designed curriculum and catalog must be incorporated in the router lesson (unless PLATO Learning Management curriculum files are used). An instructor file can be used by more than one group at a time.

To attach a file to your group file, type the number in front of the desired file, type the name of the file you want to attach, and press NEXT.

Security Codes

This option allows you to set the security codes for your group file. You can choose to allow only group members to see and/or change the file, allow only account members to see and/or change the file, or limit access to you or a set of people who know a typeable security code. This option also allows you to choose whether or not to allow systems personnel access to the file. Refer to the following paragraphs to learn more about security codes and group security.

GROUP SECURITY

Instructors and account directors are responsible for group security. The group file contains both general and specific information about the group as well as student records. Because of the confidential nature of student data, it is important to control which users are allowed to see the file. Just as instructors in conventional instructional and training settings do not want students or others to see their gradebooks or student records, neither do instructors on the PLATO system.

Group information and student records can be kept secure and confidential by using codewords. Codewords are similar to passwords in that the system checks the codeword assigned to a group file before allowing users to see or change the file. The person who creates the group file is initially responsible for assigning codewords to the file. If someone creates a group file for you, you should change the codewords the first time you use the file so only you know the codewords to the file. Codewords can be set to allow some users or specific user types different kinds of access to the group file. For example, you can set the security codes of a group file to allow only you to see or change the file, or allow only authors and instructors within your group or account to see and/or change the file. The following are examples of different types of security codes you can set.
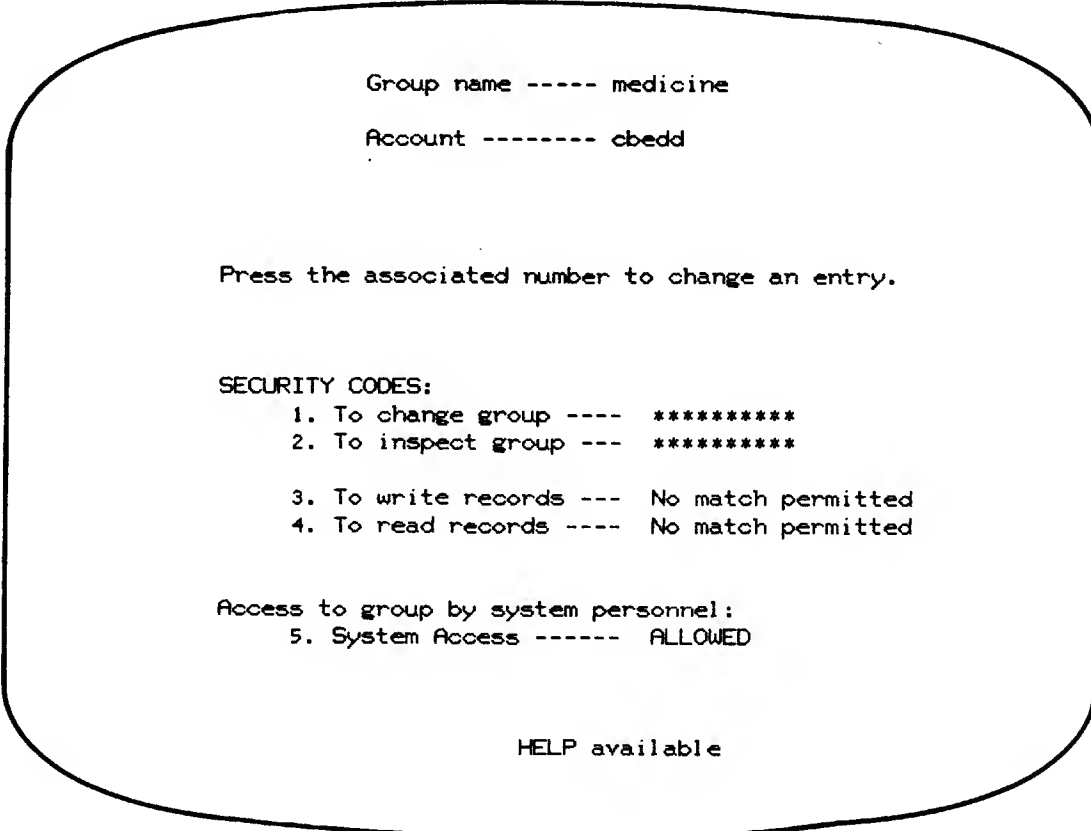
Typed code	Requires all users (except instructors in the group) to type the security codeword in order to see and/or change the group file.
GROUP code	Allows all authors and instructors listed within the group to see and/or change the group file without typing a codeword.
ACCOUNT code	Allows all authors and instructors in groups listed within an account to see and/or change the file without typing a codeword.
Unmatchable code	Prevents all users (except instructors in the group) from seeing or changing the file.

It is important to be creative when assigning codewords. If you use a typed code, be sure it is something no one can guess. Do not use obvious codes like your spouse's name; the name of your group, account, or file; your pet's name; your password; your telephone number; a period; a, b, c, and so on. Choose something with which only you can identify. Change your codewords frequently to prevent the possibility of some unauthorized or unanticipated person gaining access to your group. Examples of good typed codewords are misspelled words of at least seven characters or words with numbers inserted in them, words spelled backward with one or two numbers inserted, or a combination of several short words.

Since curriculum design information and student data are contained in the group file, instructors should be very selective about which users are allowed to access the group file. When you allow a user access to the file, you give that user the right to see, change, and/or destroy your records. Before assigning GROUP or ACCOUNT codes, carefully determine whether or not you want all users within the group or account to have access to group information.

One of the security options in the group file is the System Access option. This option lets you choose whether or not to give systems personnel (users responsible for maintaining the PLATO system) access to the group file. Systems personnel occasionally need access to files to check for errors if problems occur on the system. If you choose to allow systems personnel access to your file, authorized users can access the file in inspect (read) mode, without typing a security codeword.

All security codeword settings are made from the Security Codewords display (figure 3-6). The following steps describe how to reach the Security Codewords display and how to set and change codewords and the Systems Personnel Access option for the group file.

```
            Group name ----- medicine

            Account -------- cbedd


      Press the associated number to change an entry.



      SECURITY CODES:
            1. To change group ----  **********
            2. To inspect group ---  **********

            3. To write records ---  No match permitted
            4. To read records ----  No match permitted


      Access to group by system personnel:
            5. System Access ------  ALLOWED



                     HELP available
```

Figure 3-6. Security Codewords Display

1. From the PLATO Facilities display, choose the Group Operations option by typing the letter in front of the option. The system displays the Group Operations display (figure 3-7).

2. From the Group Operations display, press DATA. The system displays the Group DATA (Directory) display (figure 3-5).

3. From the Group DATA (Directory) display, choose the Security Codewords option by typing the letter in front of the option. The system displays the Security Codewords display.

```
                    (authors)

            ┌─────────────────────────┐
            │   Group "medicine"      │    2 people
            │                         │    33% full
            └─────────────────────────┘


      Choose an option (or press HELP):

        1   SEE or change someone's record

        2   ROSTER operations
              (list, add, delete, messages, who's running)

        3   STATISTICS on records

        4   CURRICULUM design

        5   SPECIAL options



      Press BACK to leave.
      Press LAB for space usage information.
      Press DATA for group description.
```

Figure 3-7. Group Operations Display

From the Security Codewords display, you can do any of the following, depending upon the kind of access (inspect, edit) you want to set for the group file.

● The To Change Group option allows you to determine which users or groups of users can have access to change (edit) the group file. To choose this option, type the number in front of the option. Do one of the following depending upon the type of user access you want to allow.

  – To allow editing access to yourself only, type a codeword only you know and press NEXT. A random number of X's appear to the right of the arrow as you type. The system asks you to retype it to verify it and help you remember it. Press NEXT.

  – To allow editing access to all authors and instructors in your group who have the group access option set to yes in their user records, press LAB. The system responds by displaying a GROUP option and an ACCOUNT option. Type the number in front of the GROUP option.

- To allow editing access to all authors and instructors in groups in your account who have the group access option set to yes in their user records, press LAB. The system responds by displaying a GROUP option and an ACCOUNT option. Type the number in front of the ACCOUNT option.

- To prevent any user from seeing or changing the file, press LAB. Type the number in front of the unmatchable code option.

● The To Inspect Group option allows you to determine which users or groups of users have access to read information in the group file. To choose this option, type the number in front of the option. Do one of the following depending upon the type of user access you want to allow.

- To allow inspect access to yourself only, type a codeword only you know and press NEXT. A random number of X's appear to the right of the arrow as you type. The system asks you to retype the codeword to verify it and help you remember it. Press NEXT.

- To allow inspect access to all authors and instructors in your group, press LAB. The system responds by displaying a GROUP option and an ACCOUNT option. Type the number in front of the GROUP option.

- To allow inspect access to all authors and instructors in groups in your account, press LAB. The system responds by displaying a GROUP option and an ACCOUNT option. Type the number in front of the ACCOUNT option.

- To prevent any user from seeing or changing information in the file, press LAB. Type the number in front of the unmatchable code option.

● To change either the inspect or change codewords, do the following.

- Type the number in front of the option you want changed. The system clears the previous codeword.

- Type a new codeword and press NEXT, or press LAB to allow either group or account access.

- Retype the codeword to verify it and help you remember it. Press NEXT.

● The System Access to Group option allows you to choose whether or not to give systems personnel access to your group file. Type the number in front of the option to either select or change the option. For example, to disallow systems personnel access, type the number in front of the option. To change the access, type the number again.

GROUP OPERATIONS

The most frequently used option on the PLATO Facilities display is the Group Operations option. The Group Operations option allows you to add students to or delete students from your group file, see a list of all group members, change student records, and do other administrative procedures.

The group operations described in this section are those instructors use most often. Both a description of the option and how-to information is given. Refer to Additional Instructor Options later in this section for information on Group Operations options used less frequently.

REGISTERING STUDENTS

As an instructor, you can register (roster) students or other types of users in your group. The following steps describe how to add a user to your group.

1. Choose the Group Operations option from the PLATO Facilities display by typing the letter in front of the option.

2. Select the Roster Operations option.

3. Select the Add Someone to the Roster option.

4. Follow the display instructions.

DELETING STUDENTS

This option allows you to remove students from your group, either one at a time or all students at once. When you delete a user from your group, you permanently delete that user's file or user record. (To temporarily turn off a record, without destroying it, refer to Inspecting/Changing Student Records later in this section.) The following steps describe how to delete users from your group.

Deleting Individual Students

1. Choose the Group Operations option from the PLATO Facilities display by typing the letter in front of the option.

2. Select the Roster Operations option.

3. Select the Delete Someone from the Roster option.

4. Follow the display instructions.

Deleting All Students

1. Choose the Group Operations option from the PLATO Facilities display by typing the letter in front of the option.

2. Select the Special Options option.

3. Select the Delete All Records option.

4. Follow the display instructions.

LISTING ALL GROUP MEMBERS

This option allows you to see a listing of all the users who are registered in your group. From this listing, you can choose to see an individual user's record to review or delete it. The following steps describe how to see a listing of all group members.

1. Choose the Group Operations option from the PLATO Facilities display by typing the letter in front of the option.

2. Select the Roster Operations option.

3. Select the See the Roster of people option.

4. Type the name or number of the user's record you want to see. Press NEXT to see the record or press SHIFT-HELP to delete it.

INSPECTING/CHANGING STUDENT RECORDS

This option allows you to see or change a user's record. Use this option to check a student's progress in a lesson or curriculum, change a user's password, change an author's system privileges, or to make other changes as needed. The following steps describe how to access a user record.

1. Choose the Group Operations option from the PLATO Facilities display.

2. Select the See or Change Someone's Record option.

3. Type the PLATO name of the user whose record you want to see and press NEXT.

4. Select the option that most appropriately describes the desired record change.

5. Follow the display instructions.

LEAVING A MESSAGE

As an instructor, you can leave a message to the members of your group. The group members see the message when they sign on to the PLATO system (immediately after typing their passwords). Messages can be displayed to one user, all group members, or specific user types (student, instructor, author). The following steps describe how to leave a message for your group.

1. Choose the Group Operations option from the PLATO Facilities display by typing the letter in front of the option.

2. Select the Roster Operations option.

3. Select the Leave a Message for Someone option.

4. Follow the display instructions.

USING YOUR ACCOUNT

Your PLATO account contains a definition of the services your organization purchased with the PLATO system. It contains information on the number of people who can use the system simultaneously, and also keeps a running record of the amount of file space purchased and used to date. [A file is a finite set of data. The space within the computer system which stores this information is called file space (file space is a defined, finite subset of a file). Group records, notes files, lessons, and so on are examples of files.] Think of a file as a book, a file space as a chapter, and a record as a section within a chapter.

Each account is allotted a specific number of file spaces when the account is established. This file space is allocated to users in the account. The main person responsible for the account is the account owner. The account owner is designated and identified by his/her PLATO name within the account when the account is created. The account owner manages, creates, and lengthens files; controls which users can see account information; and communicates with Control Data when additional file space is needed.

Account owners can delegate their responsibilities to other users in the account. Users who have been delegated account authority are often called account directors. (There are several different levels of account authority; not all users with access to account information are account directors. Refer to Using an Account Access List in section 5 for more information on account access levels.) As an instructor, your account owner might give you the authority to access the account. This might enable you to allocate file space to yourself and other users in the account, as well as access other account information. If you are an account director, or are assigned account director responsibilities by your account owner, refer to Using Account Options (section 5) to learn more about account director functions and responsibilities. If you are not an account director or do not have account director authority, contact your account owner or director if you need to create new files and increase the length of a file you use.

As an instructor, you can see information about your account if your account owner or director gives you access. The following steps describe how to access your account.

1. Choose the Account Transactions option from the PLATO Facilities display by typing the letter in front of the option.

2. Type the name of your account and press NEXT. Type the security code (if required) and press NEXT. The system displays the Account Main Options display (figure 3-8).

3. Press DATA from the Account Main Options display. The system displays the General Account Information display (figure 3-9).

```
  Account --------------- testa on minne

Disk parts remaining -- 254

       NEXT for PLATO and PLM file management options


       a.  Display file data

       b.  Lesson usage data

       c.  Current users in this account

       d.  Report generator options

       e.  Group records report generator

       f.  Archive options

       g.  Print access control options

       i.  Inter-account options

       j.  Network options



  DATA for General Account Information

  HELP available
```

Figure 3-8. Account Main Options Display

```
Account ----------- testa on minne

Account Owner ----- renee lavalley / s

        Disk parts remaining -   262
        Disk parts allotted --   400          HELP is available.
        Files in account -----    47
        Subscriptions --------     0

        1.  Inspect code --------------- No code--owner only
        2.  Data change code ----------- No code--owner only
        3.  File change code ----------- No code--owner only
        4.  Access by system personnel -- ALLOWED
        5.  Account access list --------- This account file

        a.  Lesson Notes File -----------
        b.  Default file change code ---- GROUP s
        c.  Default file inspect code --- ACCOUNT system
        d.  Network log datafile -------- rrl2
        e.  Network alternate log file -- rrl1


    Press the number or letter to change an item.
    Press       DATA for lesson access classes for this account.
    Press SHIFT-NEXT to inspect or edit the account access list.

    Account last changed on 11/03/80 at  9:00:33 am
    by renee lavalley / s at station 0-4

    destroy file zrrlact
```

Figure 3-9. General Account Information Display

The General Account Information display gives general information about the account. It provides the name of the account owner and stores the security codes selected by the account owner which control user access to the account. It also contains information on the date the account was last changed, the name of the person who changed it, and the change that was made.

To learn more about accounts, refer to Using Account Options (section 5).

REVIEWING AND STUDYING LESSONS

As an instructor, one of your responsibilities is to assign lessons for students in your group to study. You should review lessons to examine their content and determine their applicability to your curriculum. You can also review lessons to familiarize yourself with the learning materials, to write test questions from, or to determine whether or not to assign additional learning resources to accompany the lessons.

You can review any published lesson on the PLATO system for which your account contracts. Published courseware is copyrighted and is available on all PLATO systems. Before the courseware is published, it is tested and reviewed to ensure that the lessons operate properly, that all function keys work as described, and that there are no coding errors which could cause the lesson to work incorrectly. Published courseware is well maintained and reliable. It is never unexpectedly revised or deleted from the system.

All published lessons are included in a PLATO courseware library. Each PLATO account contracts for access to specific courseware libraries. You can see any lesson in the library(s) for which your account contracts. A list of the libraries available to your account is available from the General Account Information display in your account. The Catalog of Available Courseware contains a listing of all published PLATO lessons. Refer to Using the Catalog of Available Courseware in section 4 for a description of the differences between published and proprietary courseware and for information on using the catalog.

To review lessons or curricula and see them as a student, either use the Catalog of Available Courseware to see an individual lesson (refer to Using the Catalog of Available Courseware in section 4) or create a student sign-on for yourself to see a PLM or "mrouter" curriculum.

The following steps describe how to review published PLATO lessons.

1. Select the Choose a Lesson to Study option from the PLATO Facilities display by typing the letter in front of that option.

2. Type the name of the lesson you want to see and press NEXT. The system displays your lesson.

PLATO COURSES AND CURRICULA

PLATO lessons can be presented to students in various ways. As an instructor, you determine how your lessons are presented and also how much flexibility to give your students while taking lessons. Most students are assigned a curriculum to study. A curriculum is a study plan which concentrates on a specific topic or subject, or set of topics.

Curricula can be presented to students in different ways, depending upon which method of instructional delivery you select. Some curricula are composed of several modules. A module is a group of lessons which relate to the same basic subject. Each lesson in the module presents instructional materials which concentrate on a different area or aspect of the module topic. The combined lessons and modules compose the curriculum (figure 3-10).
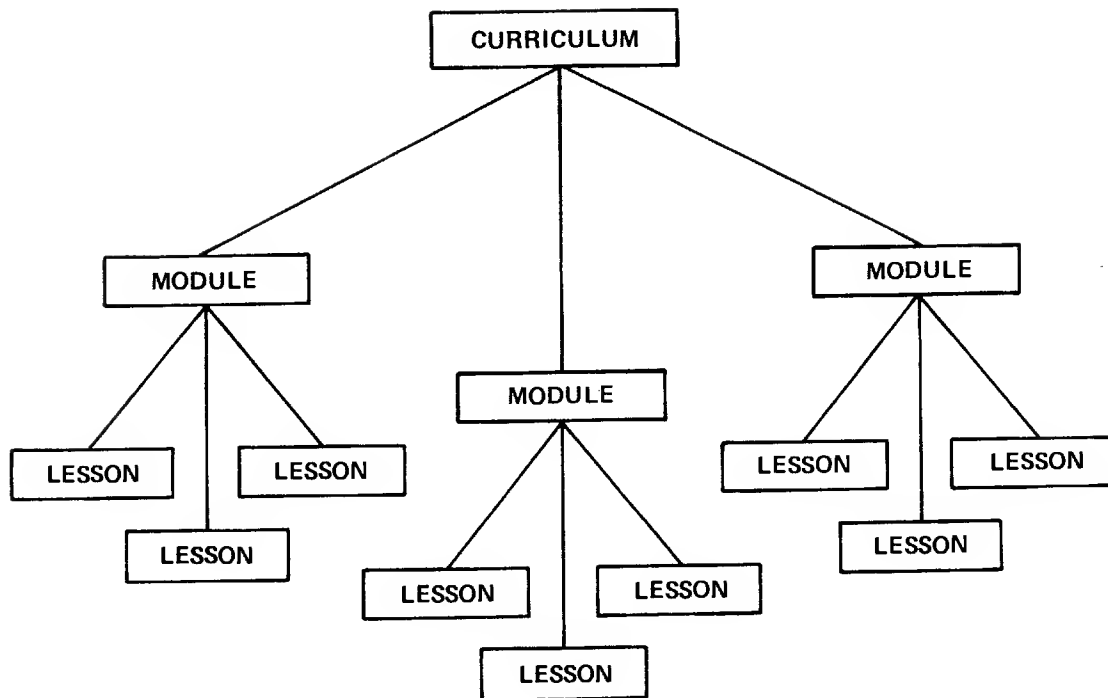
Figure 3-10. Curriculum Structure - Example 1

Other curricula are composed of several courses. A course is a complete learning package which concentrates on a specific topic or subject area of the curriculum. It contains modules which can present objectives, provide instructional lessons, administer tests, and suggest study materials related to the subject of the course (figure 3-11).

Most curricula are designed to meet the individual needs of students. Curricula can be designed to allow differing degrees of flexibility to students studying the curricula. Some curricula are designed to allow students to choose the order of the lessons they want to study, while others require them to study lessons according to a specified sequence or establish hierarchies of prerequisite and more advanced lessons. Some curricula give students the option to take a test before studying a lesson. Usually, if they pass the test, they are not required to study the lesson. Taking a test before studying the lesson materials helps them know which parts of the lesson they should concentrate on more than others, and lets them preview the test questions. Many curricula include a statement of the objectives for the modules and lessons. These objectives help the students get a better understanding of the purpose of the lesson and the information they are expected to know once they complete the course of study.
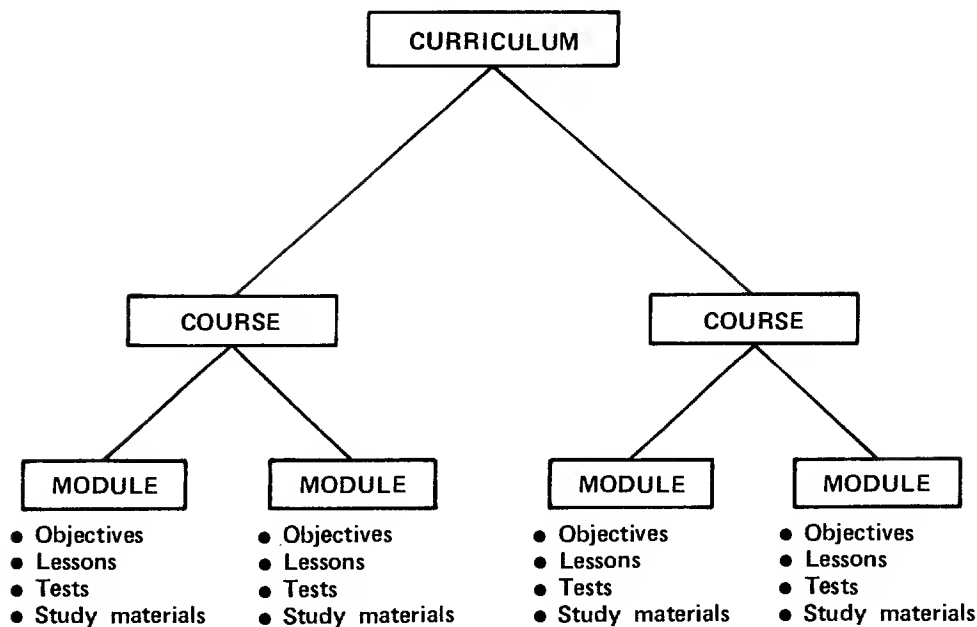
Figure 3-11. Curriculum Structure - Example 2

DESIGNING A CURRICULUM

Planning a course of study for students is called designing a curriculum. Several factors are involved in designing a curriculum. First, decide what the curriculum should accomplish. This determines the instructor's curriculum needs and also helps the instructor select the best instructional management tool for these needs. Some examples of things to consider when determining the curriculum objectives are: the kind of student population studying the curriculum, the difficulty of the subject, the time frame to work within, and so on.

There are several ways to design a curriculum. One way is to choose a published curriculum from the Catalog of Available Courseware (section 4), and assign it to your students. A published curriculum contains a preselected series of lessons, usually arranged in modules, which relate to the same subject area. As an instructor, you simply assign the published curriculum for your students to study. Another way to design a curriculum is to choose either individual lessons or sets of individual lessons from the Catalog of Available Courseware or other sources to include in a curriculum of your own design. You select the lessons you want included in your curriculum and either arrange them into modules, or index them in a list for students to study.

Curricula are assigned to specific groups of students. The PLATO system, however, allows you, the instructor, to individualize the curriculum for your students. For example, even though all students in the group are registered for the same curriculum, not all students must study all the lessons in that curriculum. You can specify which lessons should be studied by which students; vary the order or sequence of lesson presentation; allow the students to choose which lessons they want to study first, second, and so on; and have the system test students on lessons studied and record their progress.

INSTRUCTIONAL MANAGEMENT TOOLS

Designing and individualizing curricula is called instructional management. The PLATO system provides four instructional management tools which assist instructors in individualizing a curriculum for all students in the group. Each of these four instructional management tools has its own set of features and capabilities associated with it. Many of the features overlap and are available with more than one instructional management tool. This provides a wide range of options for the instructor to choose from when designing curricula. The four instructional management tools are: index lessons, the PLATO system router ("mrouter"), PLATO Learning Management (PLM), and routers. The following briefly describes these tools.

Index lessons

An index lesson is a lesson written by an author using the PLATO Author Language. The index lesson presents a set of lesson choices on an index display to students. They are usually used for curricula which are very straightforward and when little to no student data collection is desired. Index lessons do not collect student data unless they are coded to do so.

The system supported router ("mrouter")

The PLATO system router, "mrouter", is a lesson delivery system which contains the mechanics for presenting a list of lessons to students. Since "mrouter" is a delivery system, it does not contain specific information about which lessons to present, the order of lesson presentation, or what criteria are required to master the curriculum. This information is supplied by the instructor through an instructor file and is then delivered to students by "mrouter". The PLATO system router also collects student data for instructors to evaluate student progress and performance.

PLATO Learning Management (PLM)

PLATO Learning Management (PLM) is similar to "mrouter" in that it directs the student through a curriculum. PLM, however, has many additional features. As its name implies, PLM has management capabilities. It allows the organization of both on-line and off-line instructional materials into modules and courses which comprise a PLM curriculum. Some of PLM's management capabilities allow users to:

- Provide an introduction to the curriculum for students.

- Enter learning objectives associated with both on-line and off-line materials for students.

- Enter test questions and instructions for the presentation of the test questions. Test preparation requires no programming knowledge on the part of the instructor.

Router lessons

A router lesson is a lesson written by an author using the PLATO Author Language. A router lesson is written when an instructor has some special curriculum design requirements which are not included in "mrouter" or PLM. A router lesson contains the code which executes the special features which are needed to fulfill the requirements of the desired curriculum design.

Table 3-1 summarizes the features and capabilities of the instructional management tools. Refer to the table to select the instructional management tool which best meets your curriculum design needs. Then refer to the appropriate following section to learn how to design your curriculum using that particular instructional management tool.

97405900 C

TABLE 3-1. CURRICULUM DESIGN OPTIONS

Curriculum Design Options	Index Lesson	"mrouter"	PLM	User Written Router
Curriculum introduction	P	–	S	P
Total touch input; no keyset input beyond sign-on	P	–	–	P
Touch input for test questions	P	–	S	P
Can display objectives to students	–	–	S	P
Shows students their scores	–	–	S	P
Requires testing for student placement	–	–	S	P
Allows specification of prerequisites	–	–	S	P
Sequence of lessons; no index available	–	S	–	P
Allows review of completed material	–	S	S	P
Module indexes	–	S	S	P
Allows reference to material not on PLATO system	–	–	S	P
Suggests study assignment options	–	–	S	P
Allows an introduction to an assignment on or off PLATO system	–	–	S	P
Maximum number of lessons per curriculum	–	80	>1500	P
Maximum number of modules per curriculum	–	20	420	P
Maximum number of modules per course	–	–	28	–
Maximum number of courses per curriculum	–	–	15	–
Student statistics by module	–	S	S[†]	P
Student statistics by curriculum	–	–	S	P

[†] More extensive student data than "mrouter".

S   Standard option.
P   Programmable option.
–   Not available.

How to Use Index Lessons

An index lesson is a PLATO Author Language coded lesson in a TUTOR file which presents a list of lessons for students to study.

Index lessons do not store any information beyond what is ordinarily kept in student variables. Index lessons are usually used when instructors do not want to keep student data or lesson data. They are used to provide an index of lessons not requiring the module structure of "mrouter" or PLM.

Before you can correctly write and code an index lesson, you need to have an author sign-on and a working knowledge of the PLATO Author Language. If you do not know the PLATO Author Language, contact your account owner for help or for information on how to learn the PLATO Author Language.

When you are ready to begin coding your index lesson, you should contact your account owner to create a file in which to store your code, and to give you an author sign-on to access the file.

How to Use the System Supported Router ("mrouter")

The system supported lesson delivery system "mrouter" contains the mechanics for presenting lists of lessons (modules) for students to study. In addition to presenting lessons, "mrouter" collects data on individual student progress and performance, as well as group data. You can see information on the number of days, hours, and sessions each student used the system, or the average time for all students in the group. Information on lessons students completed and their test scores is also available, as well as the average score for all students in a lesson.

Since "mrouter" is a lesson delivery system, it does not contain specific information about any one curriculum design. It is a mechanism which presents many curricula. Curriculum specific information is stored in an instructor file. An instructor file is a file which contains specific information about each curriculum design which "mrouter" delivers. This information includes the file names and titles of all the lessons in the curriculum, the order of lesson presentation, the number and structure of the modules, and the criteria for mastering the modules in the curriculum. Essentially, the instructor file tells the system what lessons to present to the student, and when and how to present them.

Each instructor file contains a curriculum catalog which stores the file names and titles of the individual lessons which comprise the curriculum. The lessons contained in this curriculum catalog are selected from either the Catalog of Available Courseware, or from other sources (such as unpublished lessons written by other authors). From the lessons listed in the curriculum catalog, modules are created by selecting lessons and listing them in specific modules.

Basically, there are two ways to design a curriculum using "mrouter". One way is to create your own curriculum by selecting individual lessons, listing them in the curriculum catalog, and inserting them into modules. Another way is to select a published curricululm from the Catalog of Available Courseware. Generally, all published curricula are organized in instructor files. A published instructor file contains a completed curriculum catalog, definitions of the number and composition of the curriculum's modules, and mastery criteria for each module. When an instructor selects a published curriculum, the instructor uses that curriculum's published instructor file instead of creating one of his/her own. The only time an instructor needs to create an instructor file and insert information in it is if the instructor is creating a curriculum by choosing individual lessons from the Catalog of Available Courseware, arranging the lessons into modules, and establishing criteria for completing the modules. Your account owner can create an instructor file for you if you do not have account director capabilities.

The following sections describe how to use "mrouter" with a published curriculum and when designing your own curriculum.

Using "mrouter" with a Published Curriculum

After you have selected a published curriculum from the Catalog of Available Courseware, do the following steps to attach the curriculum to your group file.

1. Choose the Group Operations option from the PLATO Facilities display by typing the letter in front of the option. The system displays the Group Operations display (figure 3-7).

2. Press DATA. The system displays the Group DATA (Directory) display (figure 3-5).

3. Choose the Associated Files option by typing the letter in front of the option. The system displays the Associated Files Options display (figure 3-12).

```
                    Group name ----- medicine

                    Account -------- cbedd


        Press the associated number to change an entry.

        Student notes:
                1. File name ----------

        Data collection:
                2. File name ----------

        TERM-ask group:
                3. Group name ---------

        Processor lesson:
                4. File name ----------
                5. Access privileges --

        Routers:
                6. Student router -----    mrouter
                7. Instructor router --    imode

        Instructor file:
                8. Instructor file ----    med1
```

Figure 3-12. Associated Files Options Display

4. Locate the router section of the display. Choose the student router option by typing the number in front of the option.

5. Type mrouter and press NEXT. The system asks for the name of your instructor file.

6. Type the name of the instructor file (from the Catalog of Available Courseware) and press NEXT. The system asks for the use codeword. The use codeword for all published instructor files is the same as the name of the instructor file. Type the instructor file name again and press NEXT.

7. Access the instructor file and complete the author information section in the file.

Using "mrouter" with Your Own Curriculum

There are five steps involved in using "mrouter" with a curriculum of your own design.

NOTE

Before you begin these steps, it is a good idea to read the reference materials in AIDS on "mrouter" to get a thorough understanding of its intended uses.

1. Attach "mrouter" and an instructor file to the group file.

   a. Follow steps 1 through 5 in Using "mrouter" with a Published Curriculum (directly preceding this section).

   b. Type the name of your instructor file and press NEXT. (Remember to contact your account owner to create an instructor file for you if you are not an account director.)

   c. Access the instructor file from the Curriculum Design option on the Group Operations display (figure 3-7) of the file.

   d. If no codewords were assigned to your instructor file when it was created, you will be brought to the Instructor File Information display (figure 3-13), also reached by pressing DATA from the Curriculum Options display (figure 3-14). Assign codewords to the instructor file and enter the descriptive information to prevent accidental deletion of your file during account cleanup.

2. Insert lesson information in the curriculum catalog.

   a. After you attach an instructor file to your group file, the Curriculum Design option appears on the Group Operations display. This option appears only after an instructor file is attached to your group file. Access the Curriculum Options display (figure 3-14) by typing the letter in front of the Curriculum Design option on the Group Operations display. From the Curriculum Options display, choose the See Catalog of Lessons option to insert your lesson list in the curriculum catalog. This list consists of all lesson file names and lesson titles to be used in all modules of your "mrouter" curriculum. Follow the instructions at the bottom of the screen to insert lesson information. To copy an instructor file or curriculum catalog from another curriculum, or to delete a lesson or change lesson names, use Special Curriculum Options on the Curriculum Options display.

   b. Press HELP from the Curriculum Options display and read the section titled The Curriculum Catalog for more detailed information on the curriculum catalog and how to use it.

```
            Instructor File Information:
                      med1




    1.  "change" codeword:       **********
    2.  "use only" codeword:     **********

    3.  Name of Owner:            jane doe


    4.  Group(s)  for which this file is used:
        medicine




    Type the number of the entry you want to change.
    (This information must be filled in before the
    file can be used.)
```

Figure 3-13. Instructor File Information Display

```
                                          "medicine"
                                          "med1"


            CURRICULUM OPTIONS




    a    see/design curriculum MODULES

    b    see/construct SEQUENCES of lessons

    c    see CATALOG of lessons

    d    SPECIAL curriculum options




    Press DATA to see instructor file information.

    Press HELP for a discussion of modules, sequences,
              and the curriculum catalog.
```

Figure 3-14. Curriculum Options Display

3. Design modules.

There are three types of modules you can use in your curriculum.

- Index module – Contains a list of lessons and/or sequences from which a student makes a choice. The lessons may be selected in any order by the student and any lesson may be reviewed.

- Sequence module – Contains a list of lessons for students to study in a specified order. The instructor specifies which lessons the students will study and the order in which the lessons are studied. Each lesson is presented immediately after the previous lesson is completed. The students must study the lessons according to the specified sequence. Students do not see an index from which they can choose lessons.

- Sequence with review module – Contains an index of lessons which expands as the student completes lessons in that sequence. Students see an index listing only completed lessons. They can review previously studied lessons or continue with the next lesson in the sequence. This module is similar to the sequence module except the student can review any completed lessons.

After you have determined the kind(s) of module(s) you want to use in your curriculum, you can begin designing modules by inserting individual lessons in the modules or by assigning sequences of lessons to them. The following steps describe how to design modules.

a. Choose the See/Design Curriculum Modules option from the Curriculum Options display. The system asks you to select the type of module you want to create. Type the number in front of the desired module.

b. Type a name for the module and press NEXT. The system displays a Module Description display related to the type of module you are creating. Press HELP for information on how to insert lessons in the module or assign a sequence of lessons.

4. Create sequences of lessons.

If you plan to use sequence modules or sequence with review modules in your curriculum, you need to establish sequences of lessons to be used with those module types. The lessons in the sequences are selected from the lessons in the curriculum catalog. You select the lessons and determine the order in which you want the lessons presented. You can create up to 10 different sequences per curriculum but only one sequence can be assigned per module.

The following steps describe how to create sequences of lessons.

| NOTE |

If you prefer, you can create sequences of lessons when you create sequence modules or sequence with review modules.

a. Choose the See/Construct Sequences of Lessons option from the Curriculum Options display. The system asks you to number the sequence you want to create.

b. Assign a number to the sequence. Press NEXT. The system displays a list of numbers.

c. Type a to insert lessons in the sequence. The system displays the list of lessons in the curriculum catalog. From this list, select the lessons you want included in the sequence you are creating by typing the number in front of the desired lesson(s) and pressing NEXT. The order in which you select the lessons will be the order in which the lessons will appear in the sequence.

In addition to assigning sequences of lessons to individual modules in the curriculum, you can also assign sequences of lessons to individual students in your group. The sequences can be individualized to meet the specific needs of selected students. When a sequence is assigned to a specific student and is tailored to meet the individual needs of that student, it does not affect any other sequences defined in the curriculum's modules. Student sequences are separate from general module definitions.

To assign a specific sequence to an individual student, access the student's user record in the group file, choose the Curriculum Status option, and follow the instructions.

5. Assign completion criteria to modules.

After you have created your modules and sequences, you should establish the completion criteria for the modules. There are three types of completion criteria you can assign to your modules.

- Score criterion – Allows you to specify a minimum score for a lesson or a minimum score for all lessons in the module.

- Item criterion – Allows you to specify a specific lesson to be completed or a minimum number of lessons to be completed for that module.

- Time criterion – Allows you to specify either a specific date or time frame by which the students must complete the module.

To establish completion criteria for the module, press DATA from the Module Descriptions display and then press EDIT. The system asks you to select the type of criterion you want to use. Type the number in front of the kind of criterion you want to use and then follow the system instructions. (For more detailed information, press HELP from the Curriculum Options display and read the section titled Completion Criteria for Modules.)

After you have created a module and pressed BACK, the system displays the Module Listing display (figure 3-15). This display lists all the modules in your curriculum and provides summarized information about each (type of module, number of lessons in the module, and completion criteria for the module). From this display, you can create new modules, change the sequence of modules, and change the titles of the modules. Press HELP from this display for information on how to do these operations.

```
              Design Curriculum Modules          "medicine"
                  4 in use          4 maximum     "med1"


          NAME/ (TYPE)        # ITEMS        CRITERIA

     1    cobol                  2     Move ahead after 3 days
          (index)                      Next:   2 Back:  1

     2    two                    8     Completion of sequence
          (sequence)                   Next:   3 Back:  1

     3    cybol                  8     Completion of sequence
          (seq. with review)           Next:   1 Back:  2

     4    four                   1     Completion of sequence
          (seq. with review)           Next:   4 Back:  3




          See/Revise Module Number:  >
              HELP available
              DATA to start a new module
              LAB  to change module progression
       shift-LAB  to change module titles
```

Figure 3-15. Module Listing Display

Special Instructor File Options

There are several additional options available from the Special Options entry on the Curriculum Options display. These options allow you to copy lessons from another curriculum catalog, copy another instructor file, revise the curriculum catalog, increase the number of modules in the curriculum, delete all modules and sequences, delete individual lessons from the curriculum catalog, and destroy the curriculum catalog.

Refer to the following manuals for more information about PLM and to learn how to use this feature.

- PLATO CMI [†] System Overview

- PLATO CMI Instructor's Guide

- PLATO CMI Author's Guide

Users should also refer to the PLM On-Line Reference Manual in AIDS. To use PLM AIDS, choose the PLM AIDS option from the PLATO Facilities display by typing the letter in front of the option.

How to Use Your Own Router

To create your own router, you need either an author sign-on or the assistance of someone with an author sign-on. For information on how to design your own router, refer to AIDS and the PLATO Author Language Reference Manual.

USING DATAFILES

As an instructor, you can collect information on lessons in your curriculum with a datafile. A datafile is a special file which collects and stores information on lessons which have been coded by an author to collect data. As an instructor, you can specify the kinds of data you want collected about the lesson; the lesson author, however, must have coded the lesson to allow data collection in order for data to actually be collected. Each datafile has a set of options which allow you to choose the kind of information you want collected. You should use a datafile to collect student data relating to a specific lesson or set of lessons. Most instructors use datafiles for summative data collection (for example, to see a student's performance for the semester, or see how the class as a whole is performing). Most authors use a datafile for formulative evaluation purposes during the development of a lesson. Datafiles are rarely used with published lessons or curricula.

Datafiles are also used to collect area summaries for students in a group. Area summaries include such things as unanticipated responses from students to questions in a lesson, lesson HELP requests made but not received, and the amount of time a student spent in a particular part of a lesson. Output data is information which the author of the lesson has coded the lesson to collect. Output data can include information which is not covered in an area summary. The area summaries can be analyzed for several areas of lessons.

The following are some examples of the kinds of information a datafile can collect.

- Student answers to questions in a lesson (correct answers and unanticipated incorrect answers).

- Ratio of right to wrong answers to questions.

- Student requests for HELP, both answered and unanswered.

- Number of TERM requests made and completed (answered).

- Searches of other datafiles for specific types of data on students, lessons, modules, and so on. These search options are available in any combination.

[†] PLATO Learning Management (PLM) was originally entitled Computer Managed Instruction (CMI). Some documentation still exists which refers to PLM in this manner.

There are three steps involved in preparing a datafile to collect student data. These steps must be performed before you can begin collecting information in the datafile.

1. Create a datafile and attach it to the group file of the students for whom you want data collected.

2. Set the security codewords in the datafile to prevent unauthorized users from seeing or changing the contents of the file.

3. Set the data collection options within the group file to determine the kinds of student data to be collected in the datafile.

To create and attach a datafile to your group file, do the following steps.

1. Create a datafile through your account (if you have account director capabilities) or ask your account director to create a datafile for you.

2. Choose the Group Operations option on the PLATO Facilities display by typing the letter in front of the option. The system displays the Group Operations display.

3. Press DATA for the Group DATA (Directory) display.

4. Choose the Associated Files option by typing the letter in front of the option.

5. Type the number next to the Data Collection option. The system displays an arrow.

6. Type the name of your datafile. Press NEXT.

To set the datafile security codewords, do the following steps.

1. Choose the Datafiles option on the PLATO Facilities display by typing the letter in front of the option.

2. Type the name of the datafile. Press NEXT.

3. Press DATA. The system displays four options. Select an option by typing the number in front of the option. The options are:

- Change code — Allows you to restrict which users can see and change information in the datafile. You can assign either a typed, group, account, or unmatchable security code for the datafile. (Refer to Group Security earlier in this section for more information on file security codes and how to set them.)

- Inspect code — Allows you to restrict which users can see information in the datafile. You can assign either a typed, GROUP, ACCOUNT, or unmatchable security code for the datafile. (Refer to Group Security earlier in this section for more information on file security codes and how to set them.)

- System access — Allows you to choose whether or not to allow systems personnel access to the datafile. Type the number in front of the option to change the setting.

- Print information — Allows you to enter your name and mailing address to ensure that if you request a print of the datafile, it will be sent to you. (Refer to Requesting Prints in section 4 for information on requesting prints.)

To select the data collection options, do the following steps.

1. From the Group Operations display, choose the Special Options option by typing the number in front of the option.

2. Choose the Change Group-wide Data Collection option by typing the letter in front of the option.

3. Do one of the following, depending upon the type of data you want to collect.

   a. Select the Change Data Collection option if you want to set group-wide data collection options for all students in the group (as a whole). The system displays a list of options. The options you select must either match the lesson's -dataon- tags or the lesson must have a blank -dataon- command. Choose the options which relate to the type of data you want collected. After you make your selections, press NEXT. These options will then be set for all new students in the group (that is, any new students added to the group). To set these options for students already registered in the group, press SHIFT-HELP.

   b. Select the Specify Data Collection option if you want a specific lesson to collect extra data beyond what is already specified for the group (in the Specify Data Collection option). (The lesson's -dataon- tags must match the options you select in order for the data to be collected.)

4. Press HELP for more information on data collection or refer to AIDS for a more detailed explanation of datafiles.

ADDITIONAL INSTRUCTOR OPTIONS

The following options are the remaining Group Operations options available to instructors from the PLATO Facilities display. These options are usually used less frequently than those described earlier in this section.

MONITORING GROUP MEMBERS

From this option, you can see a list of all the group members who are currently signed on to PLATO terminals. You can also see additional information such as the number of hours an individual user has been signed on, the name of the lesson(s) being studied, the user category in which the person belongs, and so on. This option also allows you to monitor (see) another user's screen. The following steps describe how to access this option.

1. Choose the Group Operations option from the PLATO Facilities display by typing the letter in front of the option.

2. Select the Roster Operations option.

3. Select the See Who is Now Running option.

4. Follow the display instructions.

SPECIFYING GROUP DATA COLLECTION

As an instructor, you can see selected statistical information on students in your group. Formative evaluation information can be collected for individual students or for all students in your group in a datafile. The following steps describe how to collect group data.

1. Choose the Group Operations option from the PLATO Facilities display.

2. Select the Special Options option.

3. Select the Change Group-wide Data Collection option.

4. Follow the display instructions.

Refer to Using Datafiles earlier in this section for information on how to create and use datafiles.

TEMPLATING RECORDS

A template is a student record that is used as a model or pattern for other student records in your group. A templated record standardizes one or more areas of a student's record and then duplicates that area on other students' records. The student record which contains the original standardization is called the template. Passwords, lesson names, unit names, student variables, and curriculum options can be templated so that they are or will be the same on all records. Templates can be created for students who are currently registered in the group, new students to be added to the group, or both.

After you decide which student record you want to use as the template, access the student record and set the options in the record according to how you want the other records in the group to be set.

<div align="center">

┌─────────┐
│ **NOTE** │
└─────────┘

If lesson names and unit names are templated, all restart information kept by the system is lost. If variables are templated, information on students' work may be lost.

</div>

The following steps describe how to set a template.

1. Choose the Special Options option from the PLATO Facilities display.

2. Choose the Set Up a Template Record option.

3. Select the first option if you want to set a template for all new students added to the group, or select the second option if you want to set a template for all existing students in the group.

4. Type the name of the student whose record is to be used as the template. All student records affected by the template will indicate such and identify the student user record used as the template.

COPYING RECORDS FROM ANOTHER GROUP

This option allows you to copy the user record of a student registered in a group file other than your own to your group file. Choosing this option transfers a copy of the student user record to your group file without deleting the record from the original file. The following steps describe how to copy a user record.

1. Choose the Group Operations option from the PLATO Facilities display.

2. Choose the Special Options option.

3. Choose the Copy a Record from Another Group option.

4. Type the name of the group from which the user record is to be copied and press NEXT.

5. Type the codeword for the group. Press NEXT.

6. Type the name of the user whose record you want copied and press NEXT. A message indicates completion of the copy.

CREATING INSTRUCTOR RECORDS

When you create an instructor record, the system displays a number of options which can be available to the new user. It is your responsibility to designate which of these options you want the new instructor to have access to. When you are deciding which options to allow, it is important to consider what kind of position the new instructor holds and how much responsibility you want to delegate to that individual. For example, if you are creating an instructor record for a new teaching assistant, you may not want to give that person the option to change students' scores, or if the new instructor is not involved with PLM, you may choose not to include the PLM options. Use your judgement to determine how much responsibility (that is, how many options) to initially delegate to the new user. An example of some of the available instructor options is shown in figure 3-16.

```
Change options that mary smith can use.
These options will hold true at all times.


Primary Instructor Options:

    yes  a  choose a lesson from an instr. file CATALOG

    yes  b  choose ANY lesson (by lesson name)

    yes  c  see who is running at the SITE

    yes  d  see system-wide list of USERS

    yes  e  access PUBLIC notes and system announcements

    yes  f  Receive TERM-ask requests




                    Press HELP for information.
```

Figure 3-16. Available Instructor Options Display

The following steps describe how to create an instructor record and select instructor options.

1. Choose the Group Operations option from the PLATO Facilities display.

2. Choose the Roster Operations option.

3. Choose the Add Someone to the Roster option.

4. Type the number in front of the kind of record you want to create.

5. Type the name of the person you want to add to the group and press NEXT.

6. Press DATA to see the new record.

7. Choose the Allowable Instructor Options option and do one of the following steps.

a. Press DATA to give the new instructor the same options you have.

b. Type the letter in front of the option you want to set.

c. Press HELP for more information and a complete set of instructions.

8. Press SHIFT-BACK to return to the options index.

MANAGING PERSONAL NOTES

You can see statistics regarding the use of personal notes by members of your group. This option allows you to turn individual users' notes options on or off, see the total number of personal notes each user has received, and set a maximum number of notes each user is allowed to receive. You can also delete notes addressed to a user after that user has been deleted from the group. The following steps describe how to manage the personal notes activities for your group.

1. Choose the Group Operations option from the PLATO Facilities display.

2. Choose the Special Options option.

3. Choose the Manage Personal Notes Activity option.

4. Follow the display instructions.

USING NOTES [†]

Notes are messages stored in files on the PLATO system. They allow users to privately or publicly communicate with each other and allow system messages to reach large numbers of users.

As an instructor, you can use a variety of notes features. You can write personal notes to or receive personal notes from other PLATO system users; read or participate in general notes files and public notes files; and read system announcements from PLATO systems personnel. Refer to Notes in section 4 for information on the different kinds of notes and notes files and how to use them.

Instructors can also use notes to communicate with students in their group. Many instructors use the student notes feature to do this. Student notes differ from other notes in that they are contained in a special notes file created by instructors for students in a specific group. Student notes are unique because they have a variety of functions. Refer to Using Student Notes in section 4 for more information on student notes and to learn how to use them.

USING INTERACTIVE COMMUNICATIONS [†]

As an instructor, you can communicate with students and other users on the system by typing messages on your screen. The person you are communicating with reads the message as you type it. You can use this feature to receive answers to questions or solutions to problems from PLATO consultants, to help students who have questions about their lessons while they are studying the material, or to converse with another user about PLATO-related topics.

[†] Refer to inside back cover for important regulatory notice concerning the use of communications features.

The following interactive communications features are available to instructors.

TERM-talk   Allows users to communicate with other authors or instructors by typing messages on the screen. Refer to Using the Talk Feature in section 4 to learn how to use this feature.

TERM-ask   Allows authors and instructors to help users (students and other authors and instructors) solve problems or to answer questions about their lesson materials while the students are studying the lesson. Refer to Using TERM-ask in section 4 to learn how to answer users' TERM-ask requests, and to TERM-ask in section 2 to learn how to ask a question using TERM-ask.

TERM-consult   Allows authors and instructors to receive on-line help from PLATO consultants. Consultants and users communicate by typing messages on their screen. Refer to Consulting Help for Authors and Instructors in section 4 to learn how to use TERM-consult.

REQUESTING PRINTS

As an instructor, you can request prints of any file (which can be printed) on the PLATO system for which you know the security code. Refer to Requesting Prints in section 4 for more information on requesting prints and how to use this feature.

RECEIVING HELP

At some time, almost all users have questions or need help while using the PLATO system. There are basically two kinds of help available to instructors: programmed help sequences and personal help. The kind of help you request depends upon the type and extent of help you need, as well as the type of activity you are engaged in at the time you request help. Many features and lessons contain programmed help sequences which provide additional information about a feature or lesson. These programmed help sequences are programmed by the author of the lesson or feature and are only available if the author has programmed the help sequences into the lesson. Some examples of the kinds of information contained in these help sequences are: descriptions on how to use specific features, detailed information about a topic presented in a lesson, and information on how to proceed though the lesson. Programmed help is usually accessed by pressing HELP while using a lesson or feature.

Occasionally, you might have questions which require more help than you are able to receive from programmed help sequences. As an instructor, you can request personal help from other authors or instructors, or from PLATO system consultants to answer your questions. Personal help allows you to communicate with another user and receive help while on-line.

The following describes some of the PLATO system features which instructors can use to receive help.

AIDS   AIDS is an on-line reference manual for authors and instructors. It contains definitions and explanations of most of the PLATO system features and all of the PLATO Author Language commands. Refer to Using AIDS earlier in this section for more information on AIDS and how to use this feature.

TERM-consult	Authors and instructors can receive help while using the PLATO system by using the TERM-consult feature. TERM-consult allows you to communicate with a PLATO consultant about questions or problems you have while using the PLATO system. Consultants are Control Data systems personnel who are available to answer questions and solve problems for users on the system. Refer to Consulting Help for Authors and Instructors in section 4 for more information on TERM-consult and how to use this feature.
TERM-ask	TERM-ask is a PLATO system feature which gives users (usually students and multiples) the opportunity to ask authors and instructors questions about PLATO materials while the materials are being presented to them. It also gives authors and instructors the opportunity to discuss with other authors and instructors questions or problems they might have while using the PLATO system. Refer to Using TERM-ask in section 4 to learn how authors and instructors use TERM-ask to give help to other users and to TERM-ask in section 2 to learn how to use the feature to receive help from other authors and instructors.
TERM-talk	The TERM-talk feature allows you to communicate with another user who is currently signed on to the PLATO system by typing messages back and forth on the bottom two lines of your screens. Refer to Using the Talk Feature in section 4 for more information on TERM-talk and how to use this feature.

GIVING HELP

Part of your responsibility as an instructor is to provide assistance to the students in your group when they need help. The TERM-ask feature allows you to do this. TERM-ask allows students in your group to request help from you (or other authors or instructors in your absence) about questions or problems they have while using the PLATO system. You and your students can communicate by typing messages back and forth on the screen and seeing the messages as they are being typed. It also lets you monitor (see) the screen of the student requesting help.

Before your students can use the TERM-ask feature, there are some initial administrative tasks which you need to complete. Refer to Using TERM-ask in section 4 for complete information on the TERM-ask feature and how to use it.

SECTION 4

USING AUTHOR FEATURES

USING AUTHOR FEATURES

This section presents an overview of the functions of an author and defines and describes the PLATO system features available primarily to authors.

All users should read the Introduction (section 1) before reading this section. In addition, it is recommended that new authors also read sections 2 (Using Student Features) and 3 (Using Instructor Features), and practice using the system as a student and as an instructor before reading this section to get a general understanding of the features available to those user types. (Some system features described in this section are also available to instructors. The features which are available to both user types contain instructions for both users.)

INTRODUCTION

The primary function of an author using the PLATO system is to write lessons for students to study. Authors write lessons using a computer language called the PLATO Author Language. However, not all users with author sign-ons know and use the PLATO Author Language to write lessons. Some users have author sign-ons for the wide range of features and options available to authors.

An author sign-on is unique in that it allows authors to interact with the PLATO system on two levels. Since most authors write lessons, the PLATO system is designed to allow authors not only to write and edit lessons, but also to use the lessons exactly as students do. It allows authors to move between student mode and author mode without signing on to and off from the system.

Because of the complexity and diversity of the activities authors are involved in, the PLATO system provides authors with a large number of system features to support their work. Some of these features provide reference information about system capabilities, some allow authors to receive on-line help from other users or system resources, and some facilitate writing and editing lessons. Some of these resources are available only to authors, while others are available to all users or specific user types.

A good way for new authors to learn about and practice using the PLATO system features available to authors is to use the reference tools. Refer to Getting Help and Using Reference Tools later in this section for information on how to use these features.

AUTHOR RECORDS

The PLATO system contains a user record for each author on the system. The user record contains a complete listing of all the system options available to authors. From this listing, specific options are selected for individual authors to access. These options control what each author is allowed to do on the system. As an author, the options you can access on the system are determined from the options designated as allowed in your user record. The person who registers you on the system is responsible for assigning these options to you. An example of some of the available author options is shown in figure 4-1.

```
Press DATA if you want this person to have
          the same options you have.

or enter the letter of the type of individual
options you want to set:


      a. Primary Instructor Options

      b. File Editing & Printing

      c. Roster Options

      d. General Record Editing Options

      e. Student Record Editing Options

      f. Active User Options

      g. Messages and Notes

      h. Data Collection Options

      i. "mrouter" options

      j. PLM options
```

Figure 4-1. Available Author Options Display

Some authors are responsible for registering other users on the system and assigning allowable author options. The following steps describe how to create an author record and assign author options.

1. From the Author Mode display, type the name of the group in which you want to register the author and press NEXT. The system displays the Group Operations display.

2. Choose the Roster Operations option by typing the letter in front of the option.

3. Choose the Add Someone to the Group option.

4. Type the number in front of the kind of record (author) you want to create.

5. Type the name of the person you want to add to the group and press NEXT.

6. Press DATA to see the new user record.

7. Choose Allowable Author Options and do one of the following steps.

   a. Press DATA to give the new author the same options you have in your user record. You can only assign options which are assigned to you in your own user record. The options you are allowed to set are marked yes and no (not capitalized). Options you are not allowed to set or change are marked YES and NO (capitalized).

   b. Type the letter(s) in front of the specific option(s) you want to assign. Yes indicates the option is on or allowed, and no indicates the option is off or not allowed.

   c. Press HELP for more information and instructions.

8. Press SHIFT-BACK to return to the options index.

THE AUTHOR MODE DISPLAY

As an author, the first display you see after signing on to the PLATO system is the Author Mode display (figure 4-2). This display is your navigational tool on the system. All the system resources you need can be reached from this display. Unlike the PLATO Facilities display used by instructors, the Author Mode display does not provide any initial options for you to choose from. Although this might be confusing for new users, it allows more experienced authors to directly access the lesson they want to see or the feature they want to use without selecting several options to do so.
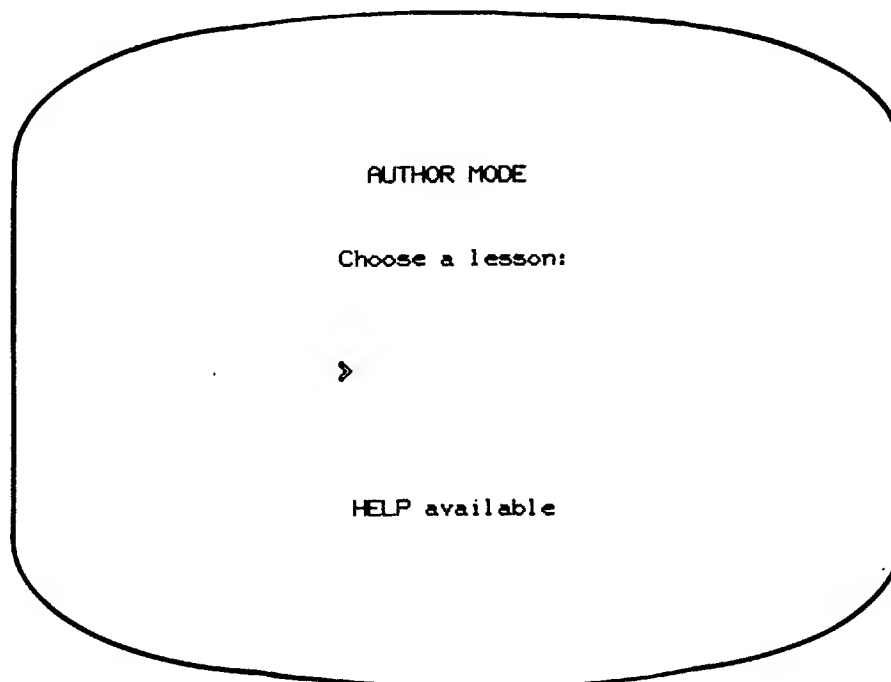
Figure 4-2. Author Mode Display

You can access a list of options frequently used by authors from the Author Mode display. This list of options is the SHIFT-DATA display (figure 4-3) and is reached by pressing SHIFT-DATA from the Author Mode display. The SHIFT-DATA display lists options frequently used by authors, gives a short description of the options, and gives directions on how to access the options. All the options on the SHIFT-DATA display can be accessed by typing the shifted letter of the option from the Author Mode display. For example, to access the AIDS option, press SHIFT and type A from the Author Mode display.

```
                --- O P T I O N S ---

            A       aids
            B       bulletin board
            C       charset
            D       desk calculator
            E       ECS usage
            F       catalog of lessons
            I       info on records/talk flags

            J       j-stack (not available here)
            L       lineset
            M       micro
            N       notes
            P       personal notes
            Q       questions (aids)
            R       request prints

            S       security code
            T       time
            U       user list
            V       version
            W       write common to disk
            X       lesson X-search
            Z       zzz (alarm service)

        Press  HELP  for more information

 On the AUTHOR MODE display, press the SHIFTed letter
 to access the corresponding option immediately.
```

Figure 4-3. SHIFT-DATA Display

| NOTE |

Not all users can access all options on the SHIFT-DATA display. Accessibility of some options is determined by the group the user is registered in and the individual author options selected for that user. Contact your account director to gain access to unavailable options.

The SHIFT-DATA display functions as a reference tool which reminds you of what key to press to access a specific feature. After a short time, you will learn which keys are associated with specific features and will not need to refer to the SHIFT-DATA display for that information.

The following paragraphs briefly describe some of the most frequently used options on the SHIFT-DATA display. The remaining options are described in Additional SHIFT-DATA Display Options later in this section.

AIDS

AIDS is an on-line reference manual for authors and instructors which contains definitions and explanations of most of the PLATO system features and all of the PLATO Author Language commands. Authors frequently use AIDS as a reference tool when using the PLATO system. To access AIDS, press SHIFT and type A from the Author Mode display. Refer to Using AIDS later in this section for more information on AIDS and how to use this feature.

CATALOG OF AVAILABLE COURSEWARE

The Catalog of Available Courseware is a reference catalog which contains a listing of all published courseware on the PLATO system. The catalog is used as a tool for locating courseware materials and for providing information about courseware materials. Authors often refer to the Catalog of Available Courseware as the F Catalog because it is accessed by pressing SHIFT and typing F from the Author Mode display. Refer to Using the Catalog of Available Courseware later in this section for more information on the catalog and how to use it.

NOTES

Notes are messages which allow users to communicate with each other and allow system announcements to reach large numbers of users. Authors can access different kinds of notes files, depending upon the notes options selected for their use and the access status of individual notes files. To reach the PLATO Notes Options display, press SHIFT and type N from the Author Mode display. Refer to Notes later in this section for more information on notes and how to use them.

PERSONAL NOTES

Personal notes are private messages between two users on the PLATO system. They allow users to communicate on an individual and personal basis. To reach the Personal Notes display, press SHIFT and type P from the Author Mode display. Refer to Using Personal Notes later in this section for more information on personal notes and how to use them.

USER LIST

The PLATO User List displays the names of all authors and instructors who are currently signed on to the PLATO system and who have voluntarily included their names in the list. Authors can see this information and either include or remove their names from the list. To reach the PLATO User List, press SHIFT and type U from the Author Mode display. Refer to Using the PLATO User List later in this section for more information on the User List and how to use it.

PRINTS

The print feature allows users to request prints of files from the central site (central prints), or to print a file or make copies of displays on the PLATO terminal screen using a printer attached to a PLATO terminal (local prints). In order to request central prints, a user's account must contract to use the print feature. No contractual agreements are necessary for local prints. Users whose accounts are on Control Data Services Systems should have the print option in their author record turned on and contact their account director to request central prints. The print feature also allows users to check the status of a central print request previously made and the status of the central printer. To reach the print feature, press SHIFT and type R from the Author Mode display. Refer to Requesting Prints later in this section for more information on prints and how to request them.

UNDERSTANDING FILE STRUCTURE AND USE

The PLATO system can store large amounts of information for all users. Because it can store vast amounts of information, the information must be organized in such a way that it can be easily retrieved and used. All information on the PLATO system is contained in files. A file is simply a delegated amount of space in the computer's memory in which information can be stored. It allows users to easily insert, organize, and retrieve information. An easy way to understand the concept of files is to think of the PLATO system as a huge filing cabinet. Each drawer in the cabinet can be compared to a file. Each drawer (file) has a certain amount of space in which information can be stored or from which it can be retrieved.

Most users use files in some way while using the PLATO system. Students use files when they study lessons. The lessons they study are files containing code which presents the lesson. Instructors use files to register students in curricula and to keep records of students' progress. Authors use files to write lessons as well as to collect data and communicate with other users.

There are several types of files available on the PLATO system. Different types of files are used to store different kinds of information. The types of files you use is determined by the kind of information you want to store and the kinds of things you want to do with the information.

Although file types differ as far as the kinds of information they are designed to store, most files are structured similarly. Each file is assigned a certain number of parts. Each file part can store a specific amount of data. The amount of data each part can store is determined by the maximum number of computer words that can be stored in the part (usually 320 computer words can be stored in one part). A computer word consists of a string of 10 characters. A character can be any typed letter, number, or symbol. Spaces between characters count as a character, but blank characters at the end of a line do not. Capital letters count as two characters. The number of parts assigned to the file determines the file's length or size. The length of the file (the number of parts) is assigned by the account director when the file is created. (There is, however, a maximum number of parts which can be assigned for each type of file.)

Each type of file differs slightly due to the varying functions of the files, but all have some kind of understandable structure which allows you to easily use the files. Most files have a central index which allows you to organize information in a logical manner, as well as easily locate information and move around in the file. The structures of the indexes for each type of file differ slightly. Some files are indexed by blocks (as in TUTOR lesson files, figure 4-4a), while others might be divided into numbered sections (as in documentor files, figure 4-4b). Whatever the structure, directions are always provided to help you understand and effectively use the indexes.

```
        LESSON--english                    HELP available



                        BLOCK  NAME

                   -    a      *directory
             chars  b      one
                    c    ** grammar
```

Part A

```
    Document dintro                        INSPECT ONLY
    _____
    a f  Preface/Introduction
      b 1.1   Introduction to Documentor
      c 1.2   What is Documentor?
      d 1.3   What is a Document?
      e 1.4   What is a Major Section?
      f 1.5   What is a Subsection?
      g 1.6   Document Size Limits
      h 1.7   Accessing a Document
        i 1.7.1   Reading a Document
        j 1.7.2   Editing a Document

    ** END OF MAJOR SECTION **











    _____
    What command >
    HELP available
```

Part B

Figure 4-4. Examples of File Indexes

Each type of file also has a directory which contains information about the author of the file; briefly describes its contents; and contains basic information about the file, its security codewords, and associated files. This information is entered by the author when the file is used for the first time. This directory display is reached by pressing DATA from the main index of most file types (SHIFT-DATA is the keypress for notes file directories). Some examples of directory displays are in figure 4-5.

```
Document name -- usersgd          Disk pack -- epmast
Starting date -- 11/24/8Ø         Account ---- support

Last accessed -- 12/Ø4/8Ø  13.43.4Ø.
          by ---- jean price of sinspect at 35-1
Last action ---- Inspect / edit section 1


        Type the appropriate letter:


            a.   Author information

            b.   Associated files

            c.   Codewords

            d.   Editing specifications

            e.   Document information


    Press LAB for space usage information.


            HELP available
```

Figure 4-5. Examples of File Directories (Sheet 1 of 2)

```
Lesson name ---- english          Disk pack -- eamast
Starting date -- 09/15/80         Account ---- cbedd

Last edited ---- 11/06/80 10.41.22
          by ---- jean price of adev at 1-1

Last action ---- Single block deletion


     Type the appropriate letter: >


          a.  Author information

          b.  Associated files

          c.  Codewords

          d.  Editing specifications

          e.  Micro PLATO level




                HELP available
```

Figure 4-5. Examples of File Directories (Sheet 2 of 2)

Some files have one or more editors which allow you to insert or change information in the file. Editing directives can vary for different types of files, but directions are always provided to help you use the editors. Table 5-1 (refer to section 5) lists the different types of PLATO system files, their primary functions, and maximum allowable sizes.

GETTING HELP

As an author, you can request and receive help from several sources while using the PLATO system. The kind of help you request depends upon the type and extent of help you need, as well as the type of activity you are involved in at the time you request help.

Authors can interact with the PLATO system on two levels — as students (seeing lessons as students see them) and as authors (writing and editing lesson code and using the system resources provided for authors). When you are using the PLATO system as a student (executing and seeing lessons as students see them), there are usually programmed help sequences within the lessons which display helpful information about the lesson. These sequences are programmed by the author of the lesson and often provide more detailed information on topics presented in the lesson, information on how to proceed through the lesson, or other related information. Programmed help is usually accessed by pressing HELP while using a lesson. Many lessons display HELP or HELP available on the bottom lines of the screen to remind you to use the HELP key.

When you are using the PLATO system as an author (using system resources provided for authors, editing lessons, and so on), you can request either system-supported help or help from other users. System-supported help includes features which the PLATO system provides to aid authors while using the PLATO system. Some of these features, such as AIDS, allow you to refer to information about PLATO Author Language commands or system features. Other features, such as TERM-ask, TERM-talk, and TERM-consult, allow you to contact another author, instructor, or a PLATO system consultant and communicate on-line to discuss questions or problems you have.

The following paragraphs describe the help features available to authors.

USING AIDS

AIDS is an on-line reference manual for authors and instructors. It contains definitions and explanations of most of the PLATO system features and all of the PLATO Author Language commands. AIDS contains more than 100 lessons which collectively form a complete reference manual for the PLATO Author Language and system features. Authors and instructors frequently use AIDS as a reference tool when using the PLATO system. The following list contains examples of the kinds of information available in AIDS.

- Overview of the areas of the PLATO Author Language.

- Complete descriptions of all PLATO Author Language commands and system-defined variables.

- Author resources (lists of publications, names of PLATO systems personnel).

- Descriptions of helpful system features and lessons.

- Definitions of PLATO system terminology.

- Libraries of useful PLATO Author Language routines and character sets.

- Lists of commands (alphabetically and by function).

- Lists of indexes in AIDS.

Authors and instructors reach AIDS from different points in the system. As an author, you can reach AIDS from either the Author Mode display or the Block display (if you are editing a lesson). From the Author Mode display, you can either press SHIFT and type A, or type aids and press NEXT. The system displays the AIDS Title display (figure 4-6). From the Block display, press SHIFT and type Q and then press NEXT (this action takes you to the AIDS What TUTOR Feature display, described below). As an instructor, you can access AIDS from the PLATO Facilities display. Choose the AIDS option by typing the letter in front of the option. The system displays the AIDS Title display (figure 4-6).


```
              A  I  D  S



           Elaine Avner, Darlene Chirolas,
            Celia Davis, Jim Ghesquiere,
             Tina Gunsalus, Jim Kraatz
                and Judy Sherwood

             PSO Author Group -- CERL
             Univ of Illinois, Urbana



      Press HELP if this is your first time in lesson AIDS




  (C) Copyright, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980
      Board of Trustees of the University of Illinois
     ┌──────────────────────────────────────────────┐
     │ NO portion of the AIDS lessons may be reproduced │
     │ in any form without permission from the authors. │
     └──────────────────────────────────────────────┘
      1241 features requested per day for the last 600 days
```

Figure 4-6. AIDS Title Display

From the AIDS Title display, you can do one of three things depending upon your needs.

● Press HELP for more information on AIDS and how to use the feature.

● Press NEXT for the AIDS Index (figure 4-7). The AIDS Index consists of two displays (press NEXT for the second display, BACK to return to the first) which are like a table of contents. It presents a general overview of the information contained in AIDS. Choose an option which generally covers the type of information you want to see by typing the letter in front of the option. The system either displays the information or a second, more detailed index.

Press HELP for more information on how to use the AIDS Index.

Press a letter; or press NEXT for page 2

a   Aids for new authors

b   How to use AIDS

c   Author Resources

d   Alphabetical list of TUTOR commands

e   Functional lists of TUTOR commands

f   List of Indexes in AIDS

g   Lists of System Defined Variables, Keynames,
     Functions, Logical & Bit Operators, -specs- Tags

h   Making Displays

i   Making Graphs & Charts

j   Calculations and Variables

k   Conditional Operations

l   Sequencing

m   Judging

n   Execution of TUTOR

SHIFT-BACK always returns you to an index display.
HELP, DATA, BACK, SHIFT-NEXT are always available.

Figure 4-7. AIDS Index (Sheet 1 of 2)

Press a letter; or press NEXT for page 1

o   The PLATO Computer

p   Special Characters: ACCESS Characters, Linesets,
    FONT Characters (Character Sets), & MICRO Keys

q   Student Data, Instructor Options, & Routers

r   Keynames, Keycodes, and Internal Codes

s   Programming Errors and Condense, Lesson, &
    Execution Errors

t   Library of Author Routines

u   Microfiche and Photographing the Plasma Panel

v   Systematic Lesson Design

w   The Programmable Terminal (PPTs & ISTs)

SHIFT-BACK always returns you to an index display.
HELP, DATA, BACK, SHIFT-NEXT are always available.

Figure 4-7. AIDS Index (Sheet 2 of 2)

- Press DATA to bypass the index and see a display which allows you to type a specific command or feature on which you want information. This display is the What TUTOR Feature display (figure 4-8). Type the name of the command or system feature on which you want information and press NEXT. The system displays the information.

```
                              AIDS



      What TUTOR feature?    >



           HELP      for help on how to use AIDS

        SHIFT-BACK  for Main AIDS Index

        SHIFT-DATA  to make a comment about AIDS
```
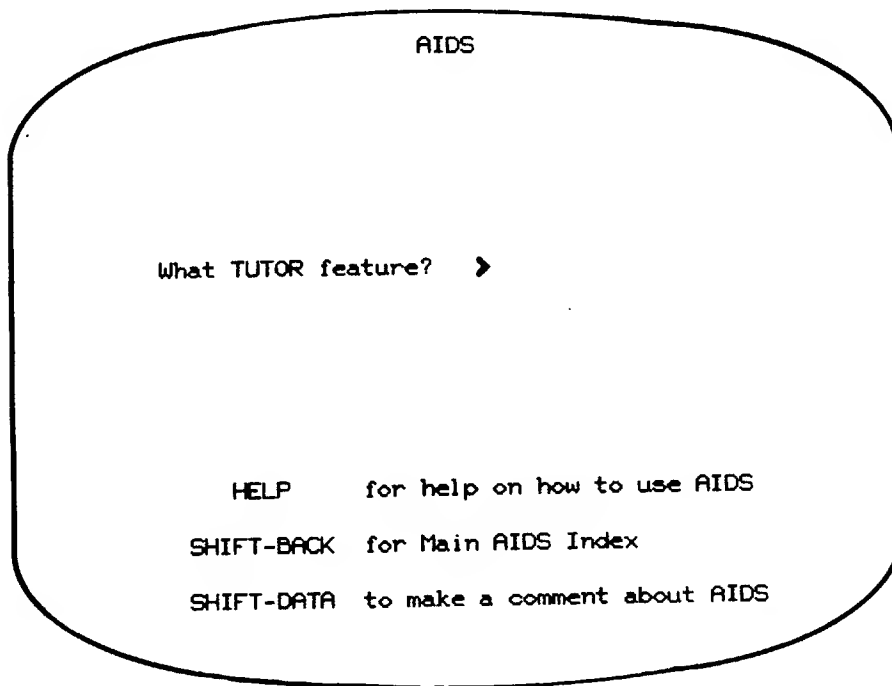
Figure 4-8. AIDS What TUTOR Feature Display

For a quick reference, you can press DATA from anywhere in AIDS, see the What TUTOR Feature display, and request information.

Press HELP from the What TUTOR Feature display for more information on how to use this display.

Refer to Quick Reference (Q-Ref) later in this section for information on how to access AIDS while editing a TUTOR file.

CONSULTING HELP FOR AUTHORS AND INSTRUCTORS

Authors and instructors can receive help while using the PLATO system by using the TERM-consult feature. TERM-consult allows you to communicate with a PLATO consultant about questions or problems you have while using the PLATO system. Consultants are Control Data systems personnel who are available to answer questions and solve problems for users on the system.

The following paragraphs describe how to use the TERM-consult feature.

To contact a consultant, do the following steps.

1. Press TERM (hold the SHIFT key down while pressing the TERM/ANS key).

2. Type consult and press NEXT. The system responds by displaying either a message that says a consultant has been notified of your request and will respond as soon as possible, or that no one is available at this time but your name has been placed on a waiting list.

3. When a consultant answers your call, you see a message at the bottom of the screen indicating the name of the consultant and that the consultant sees the same display that is on your screen (for example, mary jones/pso sees this display).

<div align="center">

NOTE

</div>

If you solve your problem before a consultant reaches you, you can cancel the request. To cancel a request, press TERM and type consult again. The system asks if you want to reaffirm your request or cancel it. Press NEXT to repeat your request for help, or press SHIFT-HELP to cancel it.

To talk with the consultant, do the following steps.

1. When the consultant answers your call and a message similar to mary jones/pso sees this display appears, an arrow also appears at the bottom of the screen. Any message your consultant types to you appears to the right of that arrow. You can communicate with the consultant by pressing TERM. When you press TERM, a second arrow appears on the screen. This means you are in talk mode. Talk mode allows both you and the consultant to type and respond to messages on the screen. As you type, your message appears to the right of the second arrow.

2. If your message requires more than one line of typing, press LAB to clear the line and continue typing. The LAB key is the only key that allows you to continue typing. If you press any function key other than LAB, the arrow disappears. You can only communicate with the consultant when the second arrow is visible and you are in talk mode. If the arrow disappears, press TERM to recall it and resume typing.

Sometimes it is helpful for a consultant to see what is on your screen in order to answer your question or solve your problem. Showing the consultant your screen eliminates the need for you to describe in detail where you are on the system and what is giving you problems.

In order for the consultant to see the same thing on his/her screen that you see on yours, you must replot your screen. Replotting your screen means to move from the display you are currently looking at to a new display (you can always return to your original display again if that is the display you need help with).

To show the consultant your screen, do the following steps.

1. Tell the consultant you are replotting your screen.

2. Press BACK to leave talk mode, then go to the first display you want the consultant to see.

3. Press TERM to get into talk mode again and ask your question or discuss the display.

4. To show the consultant a different display, press BACK to leave talk mode. Go to the new display and repeat step 3.

To end the consultation, do the following steps.

1. When your question has been answered and you do not need any further help, type thanks and the consultant ends your communication.

2. The system displays a message saying the consultation is over.

USING TERM-ask

TERM-ask is a PLATO system feature which gives users (usually students and multiples) the opportunity to ask authors and instructors questions about instructional materials while the materials are being presented to them. It also gives authors and instructors the opportunity to discuss with other authors and instructors questions or problems they might have while using the PLATO system. TERM-ask can be used as an instructional aid by authors and instructors who want to discuss questions with students as they arise, or for courses requiring dialog to reach objectives. It is particularly useful for students who are having difficulty with some concepts in their lessons. It is also useful within author groups in which more experienced authors would like to answer new authors' questions about procedures, policies, specific development projects, or programming in general.

TERM-ask is available to any user whose group is prepared to use the TERM-ask feature. The author or instructor responsible for the group determines whether or not to allow users in the group to use the feature, and also determines which authors and instructors in the group can respond to TERM-ask requests.

The following paragraphs describe how to prepare a group to use the TERM-ask feature, how to request help from other authors and instructors, and how to respond to TERM-ask requests from other users.

Preparing the Group to Use TERM-ask

1. Do one of the following depending upon your user type.

    a. From the Author Mode display (for authors), type the group name of the users who you want to use TERM-ask. Press NEXT. The system displays the Group Operations display.

    b. From the PLATO Facilities display (for instructors), choose the Group Operations option by typing the number in front of the option. Type the group name of the users who you want to use TERM-ask. Press NEXT. The system displays the Group Operations display.

2. Press DATA. The system displays the Group DATA (Directory) display.

3. Choose the Associated Files option by typing the letter in front of the option.

4. Type the number below the TERM-ask option. The system displays an arrow.

5. Type the group name of the users (authors and instructors) who you want to answer the TERM-ask requests.

NOTE

You can only enter one group name and it must be
a group for which you know the security code.

After you prepare the student group to use TERM-ask, you need to designate which users in your group (the group in which you are registered) are available to receive TERM-ask requests and answer student questions. Usually, this includes you and occasionally another author or instructor in your group who is familiar with your curriculum. The following steps describe how to enable your group to receive TERM-ask requests and answer student questions.

1. Do one of the following depending upon your user type.

   a. From the Author Mode display (for authors), type the group name of the user(s) who you want to receive student TERM-ask questions. Press NEXT. (Remember, you can only enter one group name. Be sure it is the group in which you are registered and for which you know the security code if you want to answer your students' TERM-ask questions.) The system displays the Group Operations display.

   b. From the PLATO Facilities display (for instructors), choose the Group Operations option by typing the letter in front of the option. Type the group name of the user(s) who you want to receive student TERM-ask questions. Press NEXT. (Remember, you can only enter one group name. Be sure it is the group in which you are registered and for which you know the security code if you want to answer your students' TERM-ask questions.) The system displays the Group Operations display.

2. Choose the See or Change Someone's Record option by typing the letter in front of the option.

NOTE

Before you can set another user's record to allow
that user to receive TERM-ask requests, your user
record must have the Receive TERM-ask Requests
option set to YES. Ask your account owner or an
account director to assign this option to you.

---

3. Type the name of a person in your group who you want to receive and answer TERM-ask questions. Press NEXT.

4. Select Choose Allowable Instructor Options.

5. Choose Primary Instructor Options.

6. Locate the Receive TERM-ask Requests option. Set the option to yes by typing the letter in front of the option.

7. Repeat steps 2 through 6 from the Group Operations display to enable other authors and instructors in your group to answer TERM-ask requests.

| NOTE |

Each author and instructor in the group who wants to receive TERM-ask requests must set his/her own TERM-ask user flag setting to YES in order to receive TERM-ask requests. (This is in addition to having the TERM-ask option turned on in his/her user record.) Refer to User Statistics and Flag Settings later in this section for information on how to set your own user flags.

Sometimes you might not be signed on to the PLATO system when a student requests help. You can help students at a later time if you have a student notes file attached to your student group. A student notes file records information on which students request help while you are signed off the system. It collects students' unanswered questions and allows you to answer them at a later date by writing the student a note. To use a student notes file to collect information while you are signed off from the system, attach a student notes file to the student group which requests help using TERM-ask. The following steps describe how to attach a student notes file.

1. Create a student notes file for your group through your account. Your account director can create a student notes file for you if you do not have account director capabilities.

2. Go to the Group Operations display of the student group which uses TERM-ask to ask questions. Press DATA. The system displays the Group DATA (Directory) display.

3. Choose the Associated Files option by typing the letter in front of the option.

4. Type the number below the Student Notes option. The system displays an arrow.

5. Type the name of the student notes file to the right of the arrow.

Using TERM-ask to Request Help

To use TERM-ask to request and receive help from another author or instructor, follow the instructions given for students in section 2, TERM-ask.

Responding to TERM-ask Requests for Help

When a student or another author or instructor uses TERM-ask to request help, the request is shown to all authors or instructors who have been designated to receive TERM-ask requests for that group. The request appears as a message on the bottom of the author's or instructor's screen indicating the name of the user requesting help; the group in which the user is registered; and the site number, station number, and system the person is using.

To respond to a user's TERM-ask request for help, authors should type ask on the Author Mode display and press NEXT, and instructors should choose the Interactive Communications option on the PLATO Facilities display by typing the letter in front of the option and then selecting the Respond to TERM-ask Requests option on the Interactive Communications display. The system displays the TERM-ask Options display. From this display, you can choose any of the following options. To use any of these options, type the number in front of the desired option.

- See which users in your group are signed on and are registered as TERM-ask consultants.

- See which users are currently signed on in any group for which your group is the consulting group. (This option allows you to see which users might request help).

- Do any of the following:

    - See a list of pending requests for help from users in your group.

    - Send a message to any user who has requested help. (For example, this option could be used to say, "I'll be with you in a moment.")

    - Monitor the screen of any user requesting help.

    - Delete a request for help, indicating to other consultants that this user's problem has been solved.

The list of users waiting for help is circular. Older requests are automatically overwritten, usually only after several hours have passed. Remember that users who request help using TERM-ask are given an option to write a note to the student notes file for their group when no one is available to help them.

TERM-talk

The TERM-talk feature allows you to communicate with another user who is currently signed on to the PLATO system by typing messages back and forth on the bottom two lines of your screens.

To learn how to use TERM-talk, refer to Using the Talk Feature later in this section.

USING COMMUNICATIONS FEATURES [†]

The PLATO system provides authors and instructors with a wide range of communications features to use. As an author or instructor, you can communicate with other system users in a variety of ways. You can privately communicate with another user by typing messages back and forth on your screens and see the messages as they are being typed, or you can write personal notes which can only be read by the person to whom the note is sent. You can publicly communicate with several users by writing general notes which several users can read and respond to. PLATO systems personnel use this type of feature to communicate with all system users at one time. The communications features also allow you to communicate with the author of a lesson you are using by writing a note to the lesson author while you are using the lesson.

The following paragraphs describe the PLATO system communications features which are available to authors and instructors and how to use them.

USING THE TALK FEATURE

The TERM-talk feature allows you to communicate with another user who is currently signed on to the PLATO system by typing messages back and forth on the bottom two lines of the screen.

The following steps describe how to access and use the TERM-talk feature.

1. Access TERM-talk in either of the following ways.

   ● Press TERM (hold SHIFT key down while pressing TERM/ANS key) from any location.

   ● Press DATA from the Total Users Display (from the PLATO User List).

2. An arrow appears at the bottom of your screen. Type the name of the user you want to talk to and press NEXT.

3. Type the user's group name and press NEXT.

4. The system responds by paging (flashing a message at the bottom of the screen, such as TERM-talk: mary smith/biology) the person you want to talk to (if that user is signed on), or it informs you that the person is unavailable (not signed on) or is busy.

5. When the person you are paging answers, two arrows appear at the bottom of your screen. Type your message and press NEXT at the end of the line of typing.

6. Before ending a TERM-talk conversation, PLATO etiquette suggests ending with good bye or another indication to the other party that the conversation has ended. Press SHIFT-BACK to end TERM-talk.

The TERM-talk feature is not always available. Authors sometimes code lessons to inhibit specific TERM features from working in some of their lessons. Generally, this coding technique is not recommended unless the use of a TERM would defeat the lesson objectives (for example, use of TERM-calc could defeat the objectives of an arithmetic test).

[†] Refer to inside back cover for important regulatory notice concerning the use of communications features.

If you are taking a lesson which does not allow a specific TERM feature, the TERM feature is unavailable. If someone tries to TERM-talk with you while you are using a lesson that is programmed not to allow TERM-talk, you will see a message indicating that someone wants to talk with you but, when you press SHIFT-TERM, the message What Term? and the arrow will not appear. In order to talk to that person, you must leave the lesson (SHIFT-STOP).

There may be times when you are using the PLATO system when you do not want your work to be interrupted by a user paging you to TERM-talk. TERM-busy and TERM-reject are two features you can use to either make yourself unavailable for TERM-talk or to reject a TERM-talk.

TERM-busy

TERM-busy allows you to turn off your TERM-talk feature. When users try to TERM-talk with you, they receive a message saying you are busy but have been told they called. The system notifies you when someone wants to TERM-talk with you.

The following steps describe how to use TERM-busy.

1. Press TERM (hold down SHIFT key while pressing TERM/ANS key) from any display.

2. Type busy and press NEXT. System responds with a message saying you are unavailable for TERM-talk.

3. When someone tries to TERM-talk with you, the system tells the user you are busy but have been notified they called. The system also tells you who wants to talk with you.

4. To clear your TERM-busy status, press TERM, type busy, and press DATA. Signing off also clears TERM-busy.

You can also set your TERM-busy status from the User Flags display. Refer to User Statistics and Flag Settings later in this section for information on how to use this display.

TERM-reject

TERM-reject allows you to reject a TERM-talk from another user, but gives you the option of leaving a message for the user.

The following steps describe how to use TERM-reject.

1. When the system pages you to TERM-talk with another user, press TERM, type reject, and press NEXT.

2. The system responds by giving you the option of typing a message (40 characters, maximum) to the user. Type your message and press NEXT.

3. The system notifies the user that you are busy and displays your message.

COMMENTING ON LESSONS AND FEATURES

You can comment on lessons or features on the PLATO system by using TERM-comment. TERM-comment allows you to write a message about a lesson or feature on which you have questions or comments and to send it to the lesson author.

Depending upon what you are commenting on, your comments may be seen by people other than the lesson author. Lessons and features are divided into three categories: published lessons, privately-owned courseware, and system features. Published lessons are listed in the Catalog of Available Courseware and their file names usually begin with a ⌀. System features include lessons like notes, your account, the Catalog of Available Courseware, the User List, your group file, and so on. If you comment on a published lesson, your comment goes to the lesson author or to Control Data personnel maintaining published courseware. If you comment on privately-owned courseware, the author receives the comment if he/she has a notes file attached to her/his lessons or files. If you comment on a system feature, your comment will first be read by consultants in group p or pso. Often a consultant contacts you to answer your question. If your comment reports a problem, the consultant forwards the information to the personnel who maintain the system.

To learn how to use TERM-comment, refer to Commenting on Lessons in section 2.

NOTES †

Notes are indexed messages stored in files in the PLATO system. They allow users to communicate with each other and allow system messages to reach large numbers of users. Each note can have a number of responses. Notes can contain questions or informative material on any topic.

Types of Notes Files

There are several types of notes files on the PLATO system. The different types of notes files are:

Personal notes	Private notes between two users on the system. Only the addressee of a personal note can read the note.
General notes	Notes between members of a defined user community. General notes allow members to read or participate in a group discussion. General notes are also used to relay system announcements to all users.
Intersystem notes	Notes that are part of a connected notes file which enables the notes and responses written in one notes file to appear in other connected notes files on other PLATO systems.
Student notes	Notes between students and instructors. Student notes can be similar to personal notes or general notes. Students and instructors can communicate privately or all students can participate in a group discussion or receive messages from their instructor.
Lesson notes	Notes about a lesson written by users while they are studying the lesson.

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† Refer to the inside back cover for important regulatory notice concerning the use of communications features.

Notes File Access

Not all users can participate in all notes files. Only users who are allowed access to a given notes file can read or write notes. Within each notes file is a table of groups and names of users within the groups from which the access status of users is determined. When you request access to a notes file, the system searches for your group name, your PLATO name, or your user type, depending upon what criteria are established for user access. If the system finds your name, group, or user type in the allowed access column, you are granted access; if not, the system tells you you are not allowed access to the notes file.

Using General Notes

General notes are notes between members of a defined user community. General notes can be discussion files on topics of general interest, or they can be announcements to users on the system. Access to general notes can be open to all students, authors, and instructors, or can be restricted to a smaller group of users. The following general notes files can be accessed by all authors and instructors.

System Announcements

System announcements are notes to all users from PLATO systems personnel (users responsible for maintaining the PLATO system). They frequently describe new commands and editing features. Only PLATO systems personnel can write notes in this file. All other users can only read the notes in the file.

It is important for you to check the system announcements notes file periodically, as changes to the system can affect your work. All authors and instructors should include this notes file in their notes file sequencer. (Refer to Using the Notes File Sequencer later in this section for information on how to use the sequencer.)

Three times a year, the PLATO system software is updated on all Control Data service systems. These changes are referred to as cuts of the PLATO system software. This manual is accurate as of Cut 22. Before a new cut is installed, an announcement of the new cut will be placed in this notes file along with a description of new features and additions to existing features. All authors and instructors should check the system announcements notes file at least once a week (if not daily) for new system changes.

Sometimes, when a new cut is installed, changes to the structure, nature, and function of existing files is necessary. These changes are usually automatic and are referred to as file conversions.

The following steps describe how to access the system announcements notes file.

Authors (do one of the following steps):

- Type announce on the Author Mode display and press NEXT.

- Hold down the SHIFT key and type N from the Author Mode display. The system displays the PLATO Notes display (figure 4-9). Choose the System Announcements option.


```
              -- P L A T O    N O T E S --

                   #9/29    16.33



         Choose an option  >


              a.  System Announcements

              b.  Public Notes

              c.  Other Notes

              d.  Personal Notes

              e.  Notes Files Sequencer




         Press  HELP  for information.
```
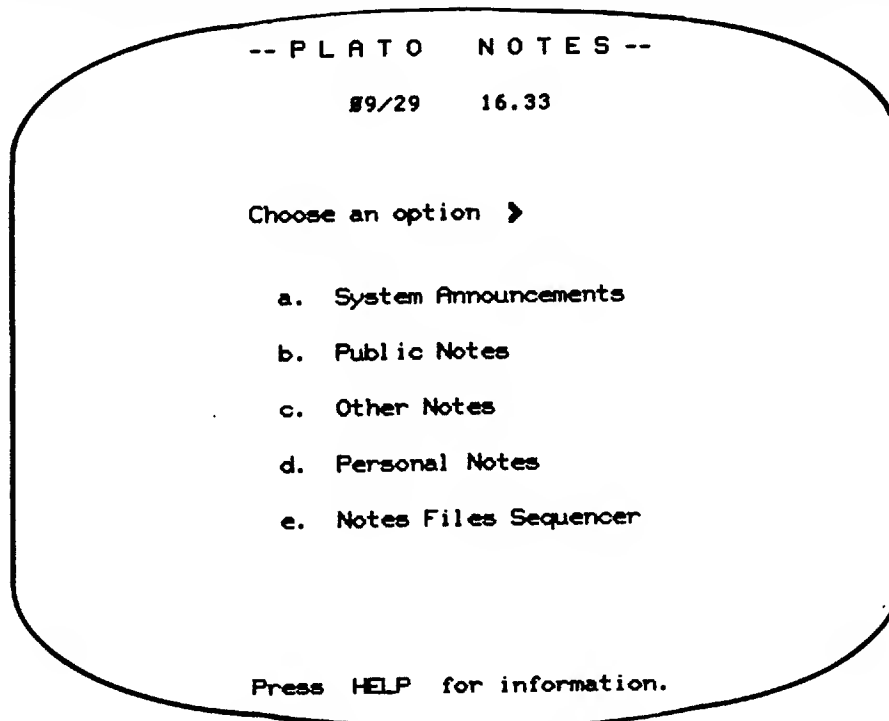
Figure 4-9. PLATO Notes Display

Instructors:

1. Select the Notes option from the PLATO Facilities display. Type the number in front of the System Announcements and Public Notes option. The system displays the Notes Options display (figure 4-10).

2. Type the number in front of the System Announcements option.

```
                     Notes Options


         1.  Public notes and system announcements

         2.  Personal notes

         3.  Student notes


    ≫
```
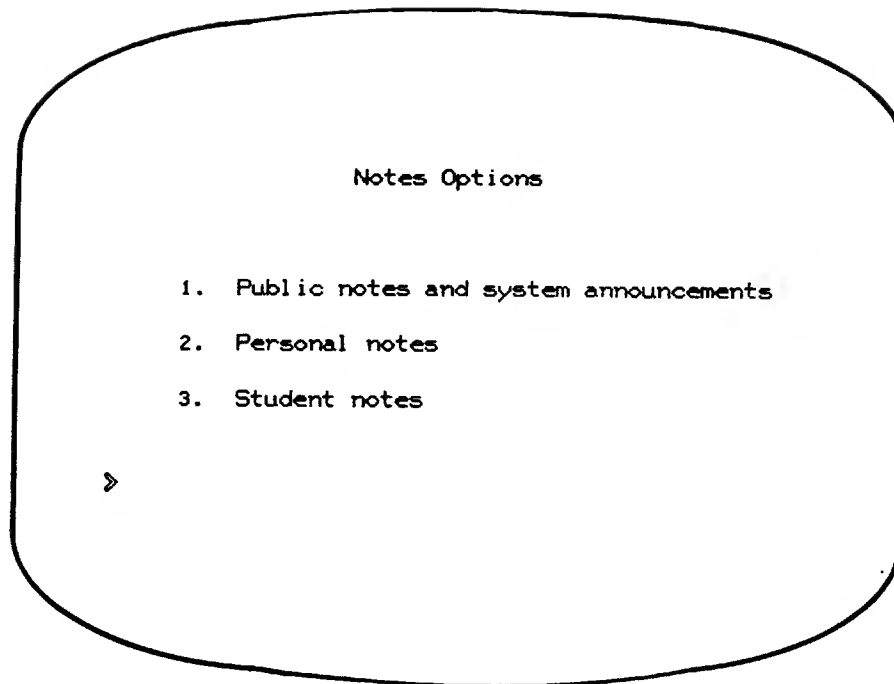
Figure 4-10. Notes Options Display

Follow the procedure for reading general notes described in How to Read General Notes later in this section.

Public Notes

Public notes are a public discussion or forum on subjects of general interest to PLATO users. Public notes are often used to discuss problems encountered while programming, to report errors in the system, or to make suggestions for improving the system. The name of the public notes file is "pbnotes".

The following steps describe how to access the public notes file.

Authors (do one of the following steps):

- Type pbnotes on the Author Mode display and press NEXT.

- Hold down the SHIFT key and type N from the Author Mode display. The system displays the PLATO Notes display (figure 4-9). Choose the Public Notes option.

Instructors:

1. Select the Notes option from the PLATO Facilities display. Type the number in front of the System Announcements and Public Notes option. The system displays the Notes Options display (figure 4-10). Type the letter in front of the Public Notes option.

Follow the procedure described in How to Read General Notes.

How to Read General Notes

The first display you see after you gain access to a general notes file is the Notes File Index display (figure 4-11). The notes file index contains a complete list of notes in the file and directions on how to read, write, and respond to notes.

```
  #  Date      Title        Resp│Control Data PLATO Public Notes
 86 9/26  Welcome!              │
 87       Welcome!          1   │ ** intersystem notesfile **
 88       no "error"        4   │
 89       ist2 zttype?      3   │
 90       bitzer lecture    1   │
 91 9/28  FOREST            6   │What note? >
 92       new notes file        │
 93 9/29  filestatus        4   │
                                │
      *** End of Notes ***      │
                                │
                                │
                                │ Press LAB    for file policy
                                │
                                │ SHIFT LAB    to write a note
                                │
                                │ SHIFT BACK   to exit

              Press  HELP  for information
```

Figure 4-11. Notes File Index Display

The following information is included in the index: the identifying number of each note, the date the note was written, the title of the note, and the number of responses to the note. The note number is the identifying number you type to request to read a note. The date of the note is the date the note was written. The title of the note gives a general idea of the subject of the note. The number of responses is the number of written responses to the note.

The following steps describe how to read a general note.

1. The Notes File Index display contains the names of the nine most recently written notes.

   a. To select a particular note to read, type the number of that note and press NEXT.

   b. To see an index of the nine notes written previously, press BACK. To read a particular note, type the number of that note and press NEXT. Repeated pressing of the BACK key displays the nine notes written before the last notes you see in the index.

   c. To see the index of the first notes in the notes file (without seeing the index information for all notes in the file), press SHIFT - .

   d. To return to the end of the notes file index (the most recently written notes), press SHIFT + . You can always tell when you are at the end of the notes file because the last note in the file is followed by an End of Notes message.

2. After you type the number of the note you want to read and press NEXT, the system displays the note for you to read. You can either continue to press LAB to read each response to the note, or press NEXT to read the next note in the file.

| NOTE |

Responses to notes are not regarded as new notes (titled, numbered, and dated) because they all relate to the same topic.

How to Read Archived Notes

Notes files have a maximum length; therefore, it is sometimes necessary to store past-dated notes to make room for more recent notes. Stored notes are called archived notes. The following steps describe how to read archived notes.

1. From the Notes File Index display, type a and press BACK. The system takes you to the most recently archived notes file. Follow the procedure for reading general notes to read archived notes.

2. To see another archived file, repeat step 1.

3. To leave the archived files and return to the most recent notes file, type new and press NEXT. Remember to look for the End of Notes message following the last note in the file.

| NOTE |
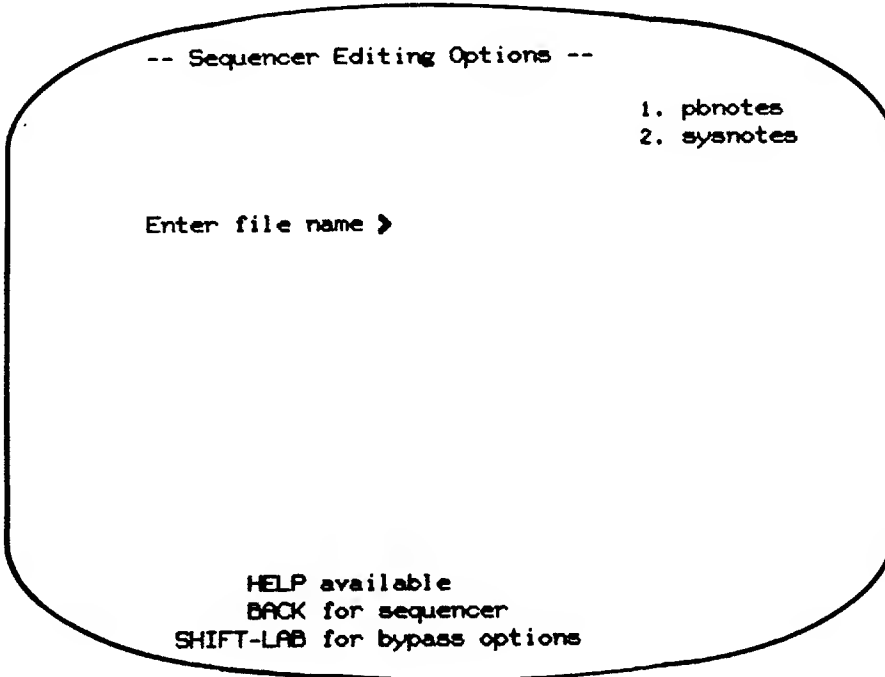
Although archived notes can continue to be read, they cannot be responded to.

Using the Notes File Sequencer

You can access all of your notes files by using the notes file sequencer. The notes file sequencer takes you from one notes file to another without returning to the PLATO Notes display or the PLATO Facilities or Author Mode display. It also directs your attention only to those notes and responses which have been written since the last time you read notes. For example, if you frequently read or participate in notes files A, B, and C, you can use the notes file sequencer to see the new notes and responses in file A, file B, and file C, and then return to the PLATO Notes display. The notes file sequencer also allows you to change the order of the notes files or skip from one notes file to another.

The following steps describe how to register files in the notes file sequencer.

1. To reach the notes file sequencer, choose the Notes File Sequencer option from the PLATO Notes display. The system displays the Sequencer Editing Options display (figure 4-12).

2. Type the name of a notes file you want to include in the sequencer. Press NEXT.


```
          -- Sequencer Editing Options --

                                              1. pbnotes
                                              2. sysnotes



          Enter file name >








                          HELP available
                          BACK for sequencer
                    SHIFT-LAB for bypass options
```

Figure 4-12. Sequencer Editing Options Display

3. The system asks in which numerical position you want the file listed (if this is not the first file you entered in the sequencer). You can either type the number of the position in which you want the file listed, or press NEXT to add the file to the end of your list.

4. Repeat steps 2 and 3 until you have included the names of all the files you want in the sequencer. The maximum number of files allowed is 60.

5. Press HELP for more information on the notes file sequencer.

97405900 C

You can also delete files from the notes file sequencer, or move files to a different position in the list. The following steps describe how to do these procedures from the Sequencer Editing Options display.

1. To delete a file, type the name or number of the file and press SHIFT-HELP to delete the file from the sequencer.

2. To change a file's position in the sequencer, type the name or number of the file you want changed and press NEXT. Press LAB. Type the number of the new position you want the file to appear and press NEXT.

3. Press HELP for more information.

4. The notes file sequencer also provides several other options which help you access new notes very quickly. These options are accessed by pressing SHIFT-LAB from the Sequencer Editing Options display.

After you have registered a list of notes files in the sequencer, you can access them one at a time by pressing DATA from the PLATO Notes display. Continually pressing DATA takes you to each new note and response. When a response has been written to an old note, you are first shown the note. The next DATA keypress takes you to the new response.

Additional General Notes Features

There are several features available to you while you are reading a general note. Some of these features allow you to send a personal note to the author of the note you are reading, talk (TERM-talk) to the author of a note, and see the current time and date.

To see a complete list of the features available to you while reading a general note, press HELP while reading a general note.

Using Personal Notes

Personal notes are private notes between two users on the PLATO system. They allow two PLATO system users to communicate on an individual and personal basis. Only the individual who wrote the note and the person to whom the note is addressed can read the personal note.

To write a personal note, you need to access the Personal Notes display (figure 4-13). Authors and instructors access this display in different ways. The following steps describe how authors and instructors access the Personal Notes display.

Figure 4-13. Personal Notes Display

Authors (do one of the following steps):

- From the Author Mode display, press SHIFT and type P. The system takes you to the Personal Notes display.

- From the Author Mode display, press SHIFT and type N. The system takes you to the PLATO Notes display. Type the letter in front of the Personal Notes option. The system takes you to the Personal Notes display.

Instructors:

1. From the PLATO Facilities display, choose the Notes option by typing the number in front of the option. The system displays the Notes Options display (figure 4-10).

2. Type the number in front of the Personal Notes option. The system displays the Personal Notes display.

From the Personal Notes display, you can read, write, and respond to personal notes. You can also save, copy, and forward personal notes. The following describes how to read and write personal notes.

How to Read Personal Notes

When someone sends you a personal note, the Author Mode display (for authors) or the PLATO Facilities display (for instructors) displays a message indicating you have a personal note to read.

To read your notes, go to the Personal Notes display and press LAB. The system displays your first new personal note.

After you read your note, you can do one or more of the following steps.

- Press NEXT to read the next personal note addressed to you.

- Press SHIFT-LAB to respond to the note.

- Press SHIFT-HELP to delete the note.

- Press BACK to read previous notes.

- Press SHIFT-BACK to return to the Personal Notes display.

How to Write Personal Notes

You can write a personal note from the Personal Notes display, or respond to a note written to you while looking at the display of the note to which you want to respond.

To write a personal note, go to the Personal Notes display and type the name, group, and system of the person to whom you are writing the note. Press NEXT. The system displays either the Insert Mode display (for authors) or the Easy Editor display (for instructors). Type your note using the same procedure described for general notes in Writing General Notes later in this section. Press SHIFT-NEXT to send your note or press SHIFT-BACK to cancel the note.

Using Lesson Notes

Lesson notes are comments about a lesson written by users studying the lesson. They are stored in a lesson notes file which is attached to the lesson by the lesson author.

Notes reach the lesson notes file through TERM-comment. When a student makes a comment using the TERM-comment feature, it is stored in the lesson notes file. TERM-comments are usually written to point out problems within a lesson such as unclear instructions, confusing explanations, incorrect answers, and so forth. From these comments, authors can rewrite their lesson to make it more understandable. Lesson notes files are usually used only during the early development and testing of a lesson or set of lessons.

As an author, you can attach a lesson notes file to your lesson from the lesson Block Listing display (figure 4-14). From the lesson Block Listing display, press DATA and choose the Associated Files option by typing the letter in front of the option. Choose the Lesson Notes File option.

```
   LESSON--english                    HELP available




                        BLOCK  NAME

             -   a        *directory
                 b         grammar
                 c         spelling
                 d         sentences
                 e         letters
          chars  f     ** one
```
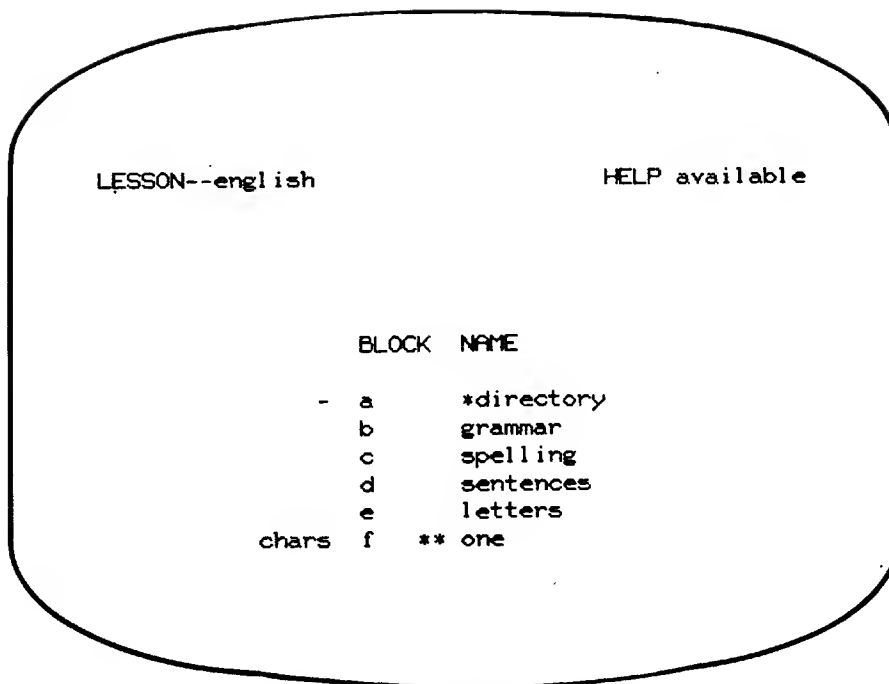
Figure 4-14. Block Listing Display

Although instuctors do not write lessons and therefore cannot set up lesson notes files, they can still receive TERM-comments from users about a lesson which is included in their curiculum. If an instructor creates a student notes file, all TERM-comments made by students in the group containing the student notes file about lessons in that group's curriculum are forwarded to the student notes file instead of to the author's lesson notes file. Authors and instructors should refer to the following section, Using Student Notes, to learn how to create a student notes file and read and respond to student notes.

Using Student Notes

A student notes file has notes features specifically for student sign ons. It can provide private notes between the student and the instructor or general notes for all students in the group. This allows a student to send a comment or question to his/her instructor and receive a personal response. In the context of student notes files, an instructor is any author or instructor who has access to the student notes file.

When a student is working on a lesson and writes a TERM-comment, that comment goes into the student notes file. The system router, "mrouter", provides a direct entry into student notes for the student, and other routers can do so if the author codes them to do so.

The system router, "mrouter", and other routers can also allow students to enter the student notes file and read all of the notes, as if it were a general notes file. This, however, defeats the privacy aspect of the student notes file. The only advantage of using a student notes file in this manner is that it combines the functions of two files: the file behaves much like a general notes file, and TERM-comments are routed into this file instead of into the lesson notes file. If space is available, it is better to use two distinct files: a student notes file for private notes, and a general notes file for public discussions.

For information on how to read, set up, and use a student notes file (using "mrouter" or your own router), refer to AIDS and type student notes on the What TUTOR Feature display.

Using Intersystem Notes

Authorized users can connect notes files between and among PLATO systems, and thereby transfer notes and responses written in each notes file to other connected notes files on other systems. The result is a maximum of 34 general notes files, each on a different PLATO system, that combine the communications of all user communities. All notes and responses written in any connected files on any system appear in all connected files on all systems. Refer to Using Network Options in section 5 for more information on intersystem notes.

Writing General Notes

You can write a general note to start a discussion about a specific topic, or to respond to a note already entered in the general notes file. Authors and instructors usually use different editors to write and respond to notes. Instructors use the easy editor and authors can use either the easy editor or the standard editor.

| NOTE |

The standard editor is automatically assigned to authors to use. To switch to the easy editor, press BACK from the Insert Mode display (described below in step 2 of Using the Standard Editor), and press SHIFT-DATA.

The following sections describe how to use each of these editors.

Using the Standard Editor (Authors)

1. Do one of the following steps, depending upon the kind of note you want to write.

   ● To write a new note (a note on a new topic), press SHIFT-LAB from the Notes File Index display.

   ● To respond to a note already written, press SHIFT-LAB from the display of the note to which you want to respond. For example, to respond to note 10, your screen must show the text of note 10 or an existing resonse to note 10. Press SHIFT-LAB.

2. After you press SHIFT-LAB (from either location), the system displays the Insert Mode display (figure 4-15). The Insert Mode display is marked by the words INSERT MODE in the upper right corner of the screen and an arrow on the left side of the screen. The upper left corner of the display tells how much space is available for you to insert text. Most general notes are restricted to 20 lines (or 120 computer words). Each time you press NEXT after typing a line of text, the space available numbers change to reflect how much space is left for your note. Insert mode means the system is ready for you to insert (type) lines of text.

```
Space left:   120 words or   20 lines        INSERT MODE
 >


```

```
                 Press  NEXT  at the end of every line
                        BACK  to end insert mode
```
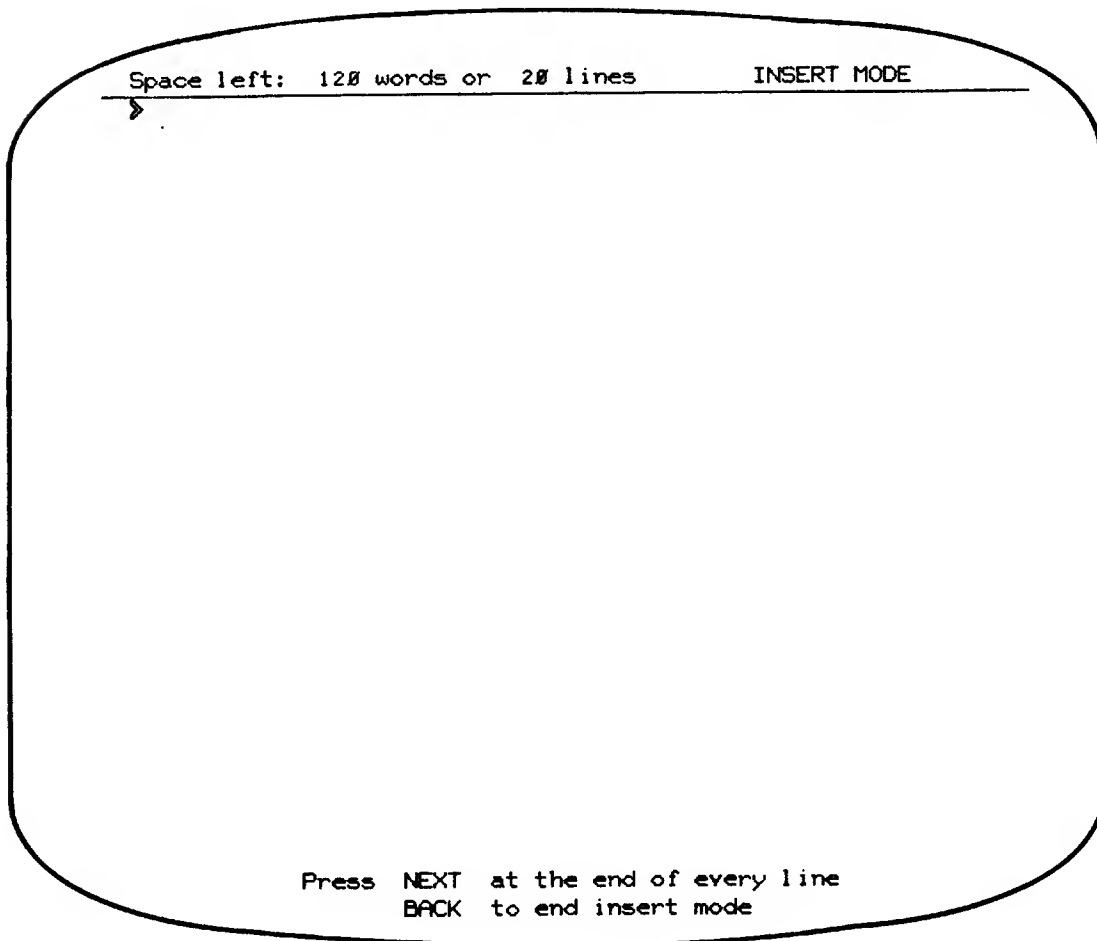
Figure 4-15. Insert Mode Display

3. Press HELP for more information on writing notes.

4. Type your note. Press NEXT at the end of each line to continue typing. Pressing NEXT advances the arrow one line at a time.

5. Press BACK when you are finished typing your note. Pressing BACK takes you out of insert mode and allows you to proofread and edit (change or correct) your note.

6. The following editing directives help you edit your note.

R The R directive is the replace directive. It is used to replace or change text within a line. To use the replace directive, type r (you do not need to capitalize it), type the number of the line you want changed, and press NEXT. For example, to correct an error in line 3, type r3 and press NEXT. The system is now in replace mode. In replace mode, the system displays the line you want to edit with an arrow directly under it. You can either retype the entire line correctly, or use the COPY and EDIT keys to edit the line. (Refer to appendix A to learn how to use the COPY and EDIT keys.) After you complete your corrections, press BACK.

I The I directive is the insert directive. It is used to insert new material into the text of your note. It puts the system into insert mode. To use the I directive, type i (you do not need to capitalize it), type the number of the line you want the new material to follow, and press NEXT. For example, to add text after line 8, type i8 and press NEXT. To add text to the beginning of a note (before line 1), type i0 and press NEXT. Type your additional lines and press BACK.

F The F directive is the forward directive. It is used to move lines of text forward on your screen. To use the F directive, type f (you do not need to capitalize it), type the number of lines you want the screen to advance, and press NEXT. For example, if lines 1 through 30 are displayed on your screen and you want to see the four lines which follow line 30, type f4 and press NEXT. The screen now displays the next four lines (and the text which follows those lines).

B The B directive is the backward directive. It is used to move lines of text backward on the screen. To use the B directive, type b (you do not need to capitalize it), type the number of lines you want the screen to back up, and press NEXT. For example, if lines 1 through 30 are displayed on your screen and you want to see the three lines which precede line 1, type b3 and press NEXT. The system now displays the three lines preceding the previous line 1. To see the beginning of your note, type b20 and press NEXT.

D The D directive is the delete directive. It is used to delete lines of text from the top of your note. To use the D directive, type d (you do not need to capitalize it), type the number of lines you want deleted (from the top of the displayed text), and press SHIFT-HELP. For example, to delete the top two lines of your note, type d2 and press SHIFT-HELP. Since the D directive only deletes text from the top of your screen, you must use the F and B directives to position the line(s) you want deleted at the top of your screen. For example, if lines 1 through 30 are visible on your screen and you want to delete line 3, type f2 (to move the screen up two lines) and press NEXT. Line 3 is now at the top of the screen (it is renumbered line 1, however, since the first line on the screen is always line 1), and can be deleted by typing d or d1 (both have the same effect) and pressing SHIFT-HELP.

   SHIFT-HELP is a special keypress used for deleting text. It is used for deletions because it is not likely to be pressed accidentally. A way to be sure the system deleted the lines you requested is to check the Space Available entry at the top of the note. When text is deleted, the space available increases.

7. After you write and proofread your note, do one of two things.

● Press SHIFT-NEXT to send the note and include it in the general notes file.

● Press SHIFT-BACK to cancel the note.

Using the Easy Editor (Instructors and Authors)

1. To write a general note, do one of two things.

    ●   To write a new note (a note on a new topic), press SHIFT-LAB from the Notes File Index display.

    ●   To respond to a note already written, press SHIFT-LAB from the display of the note or response to which you want to respond. For example, to respond to note 10, your screen must show the text of note 10. Press SHIFT-LAB.

2. After you press SHIFT-LAB (from either location), the system displays a rectangular box with an arrow in the upper left corner. Some instructions and editing directives are listed below the box.

3. Press HELP for more information on how to use the editing directives.

4. Type your message. The text appears to the right of the arrow. Press NEXT at the end of each line to move the arrow to a new line. Your note can be up to 20 lines long.

5. If you make a mistake and need to change a line, move the arrow to the line you want to change by pressing NEXT or BACK. (BACK moves the arrow up, NEXT moves the arrow down.)

6. When the arrow is pointing to the line you want to change, press EDIT. Pressing EDIT erases the entire line. You can bring back the sentence one word at a time by pressing EDIT again, one press for each word. Make your corrections by using the ERASE key or inserting new words.

7. You can insert a new line by pressing SHIFT-LAB. Position the arrow at the sentence directly beneath the line after which you want the space inserted. Press SHIFT-LAB.

8. To delete a line, move the arrow to the first line you want deleted and press SHIFT-HELP. The system then numbers the remaining lines and asks you how many lines you want deleted. Type how many lines you want deleted and press NEXT.

9. When you finish writing and correcting your note, do one of two things.

    ●   Press SHIFT-NEXT to send the note and include it in the general notes file.

    ●   Press SHIFT-BACK to cancel the note.

Using Notes File Features

When you are reading general, personal, or student notes, there are a number of options available to you. Press HELP while reading a note to see a list of these options (figure 4-16). Most of the options are self-explanatory and easy to use. The following paragraphs describe some of these options in more detail.

```
While reading notes, you may press:
    NEXT           to go on to the next note
    BACK           to go to the previous note
    LAB            to go to the next note or response
    DATA           to skip to next note or response written
                   since a certain date and time
    SHIFT-DATA     to skip to next note since a certain
                   date and time
    SHIFT-BACK     to return to the directory
    SHIFT-LAB      to respond to a note
    SHIFT-EDIT     to edit or delete a note
                   (You may only edit notes that you
                    have written, and may not edit a
                    note after responses have been made.)
    SHIFT-COPY     to copy a note to another notes file
          "n"      to replot the note
    SHIFT-"x"      to search for a certain note title
    SHIFT-"s"      to Save a note in your save buffer
    SHIFT-"a"      to Append a note to your save buffer
    SHIFT-"d"      to display current date and time
    SHIFT-"t"      to Talk to the note author
    SHIFT-"p"      to send a Personal note to the author
    SHIFT-"f"      to Forward a note via personal notes

Several other keys are available to facilitate
moving through long chains of responses to a note:
A number key (e.g., "4") moves forward that number.
A shifted number moves forward that number plus 10.
"+" moves forward 1.
"-" moves backward 1.
SHIFT-"+" jumps to the last response.
SHIFT-"-" jumps to the base note.
```

Figure 4-16. Notes File Options Display

Saving Notes

You can save a note in one notes file and move a copy of it to another file or to another position in the same file by using the save directive. From the display of the note you want saved, press the SHIFT key and type S. The system stores your note and displays the number of words and lines saved. Go to the file where you want the note inserted, press SHIFT-LAB to create a new note, and press BACK to end insert mode, then type is and the number of the line directly above where you want the saved material inserted (for example, to insert saved material after line 8, type is8 and press NEXT). The system displays your note in a new location.

NOTE

The save directive can only be used once before you transfer the saved material to a new file. If you save additional material before transferring the original saved material, the system deletes the original material and replaces it with the new information. A maximum of 320 computer words can be saved at one time.

You can, however, add more information to the save buffer without destroying the original information by using the append directive. The following section describes how to use the append directive.

Appending Notes

You can save additional material, up to a total of 320 computer words, by using the append directive. The append directive allows you to add more material without deleting the original information. From the display of the material you want added, press SHIFT, type A, and type the number of lines you want saved. Press NEXT. For example, to append (save) lines 1 through 4, type A4 and press NEXT. The system includes the added information with the saved material.

Copying Notes

You can copy notes from your personal notes file or a general notes file to another notes file with the copy directive. From the display of the note you want to copy, press SHIFT and COPY. The system responds with copy to what file? > . Type the name of the notes file you want the note copied to, and press NEXT. The system copies the note to that file.

Forwarding Notes

You can forward a note from your personal notes file or a general notes file to your own or another user's personal notes file by using the forward directive. From the note you want to forward, press SHIFT and type F. The system takes you to the Personal Notes display. Type the name, group, and system of the user to whom you want the note forwarded. The system displays three options. Press SHIFT-NEXT to forward the note, SHIFT-LAB to edit the note before you send it, or DATA to write a new note (and cancel the forwarded note).

Using Notes File Director Options

Every notes file on the PLATO system is under the direction of a notes file director. The notes file director is responsible for the general management of the notes file. Some of the notes file director responsibilities are:

- Maintain user access list for the notes file.

- Establish notes file use and policy.

- Lengthen and shorten file space as necessary.

- Delete inappropriate notes in the notes file.

- Allow/disallow connection to notes files on other systems.

- Archive the notes file.

USING REFERENCE TOOLS

The PLATO system contains several reference tools which authors can use to access on-line reference materials. Some of these tools are available only to authors, while others are available to all user types. Some examples of the kinds of reference materials available to authors are: a directory of PLATO system authors, a list of users currently signed on, personal system use statistics, the Catalog of Available Courseware, the current time and date, and information about PLATO Author Language commands and system features (AIDS).

The following paragraphs describe the PLATO system's reference tools.

AIDS

AIDS is an on-line reference manual for authors and instructors which contains definitions and explanations of most of the PLATO system features and all of the PLATO Author Language and Micro PLATO Language commands. Authors frequently use AIDS as a reference tool when using the PLATO system. To access AIDS, press SHIFT and type A from the Author Mode display. Refer to Using AIDS earlier in this section for more information on AIDS and how to use it.

USING THE CATALOG OF AVAILABLE COURSEWARE

The Catalog of Available Courseware is a reference catalog which contains a listing of all published PLATO-based courseware on the PLATO system. The catalog is used as a tool for reviewing courseware materials and for providing information about courseware materials. Authors often refer to the Catalog of Available Courseware as the F Catalog because it can be accessed from the Author Mode display by pressing SHIFT and typing F.

The Catalog of Available Courseware is similar to the standard card catalogs used in libraries. The Catalog of Available Courseware, however, contains its information on-line rather than on actual cards. The Catalog of Available Courseware contains four indexes of courseware materials arranged by title, author, subject, and file name. From each index, you can see detailed descriptions of courseware materials and, in many cases, try the actual courseware materials.

The Catalog of Available Courseware contains a list of all published lessons and curricula on the PLATO systems. Generally, there are two kinds of lessons and curricula available to users: published courseware and proprietary courseware. Published courseware is courseware which is copyrighted and available on all PLATO sytems. Before publication, the courseware is tested and reviewed to ensure the lessons operate properly, that all function keys work as described, and that there are no coding errors which could cause the lesson to work incorrectly. Published courseware is well maintained and reliable. It is never unexpectedly revised or deleted from the system. Proprietary courseware, on the other hand, is courseware which an author owns and has made available to other users. Proprietary courseware is not copyrighted and has not been tested or reviewed by lesson publishing personnel. It is available only on PLATO systems on which the author of the courseware resides. Proprietary courseware can be rewritten, changed, or deleted without warning. With proprietary courseware, you have no guarantee that the lesson is stable. Instructors should be extremely cautious about using proprietary courseware in their lessons, are recommended to use lessons for a short period of time (1 or 2 weeks) only, and to contact the lesson author before doing so.

Authors and instructors reach the Catalog of Available Courseware in different ways. Authors can access the catalog from the Author Mode display by pressing SHIFT and typing F. The system displays the Courseware Catalog Options Index (figure 4-17). Instructors can access the Catalog of Available Courseware from the PLATO Facilities display. Select the Choose a Lesson to Study option by typing the letter in front of the option. At the next display, press LAB to see the Courseware Catalog Options Index.

From the Courseware Catalog Options Index, you can see an overall description of the catalog and its features and see courseware materials arranged by title, author, subject, and file name.

To see the overall description of the catalog and updated courseware information, type a from the Courseware Catalog Options Index. The system displays a list of options describing features and aspects of the Catalog of Available Courseware. Select an option by typing the number in front of it.


```
              Catalog of Available Courseware


         ┌──────────────────────────────────────────┐
         │                                          │
         │         (a)   How to Use This Catalog    │
         │                                          │
         │                                          │
         │    Materials Arranged by:                │
         │                                          │
         │         (b)   Title                      │
         │                                          │
         │         (c)   Authors                    │
         │                                          │
         │         (d)   Subjects                   │
         │                                          │
         │         (e)   Filenames                  │
         │                                          │
         └──────────────────────────────────────────┘



    Press          LAB       for New Titles
    Press SHIFT-LAB           for Courseware Queries
    Press SHIFT-NEXT          for Catalog Display Options
```
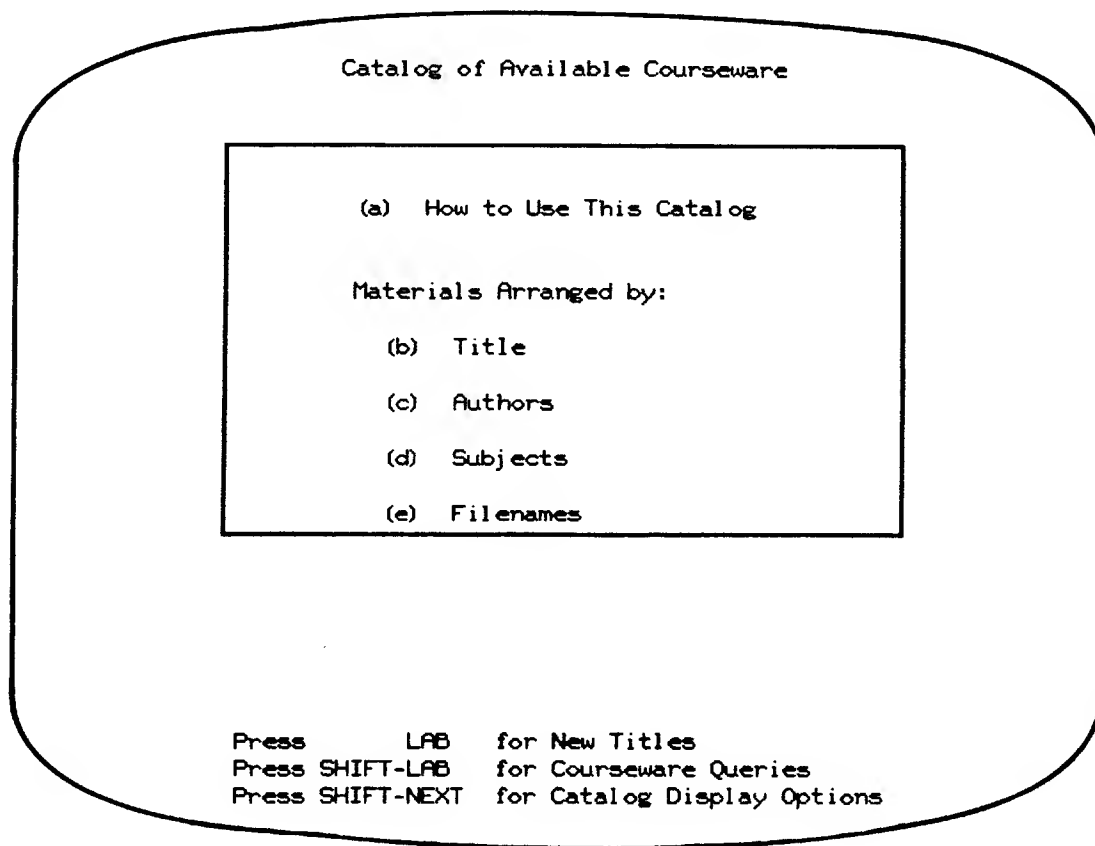
Figure 4-17. Courseware Catalog Options Index

To see courseware materials, type the letter in front of the type of index you want to see. For example, to see a listing of courseware materials arranged by title, select the title index option. The following paragraphs describe how to use the title, author, subject, and file name indexes.

The title index (figure 4-18) alphabetically lists the titles of all the PLATO-based courseware materials. Although there is one main alphabetical title index, lists of titles also appear throughout the catalog under subject headings and author names.

```
          Catalog of Available Courseware



              ┌──────────────────────────────┐
              │                              │
              │    Alphabetized Title Index  │
              │                              │
              │  Type in first few letters of Title │
              │                              │
              │        ❯                     │
              │                              │
              │                              │
              └──────────────────────────────┘




              Press NEXT for beginning of list
```

Figure 4-18. Catalog of Available Courseware Title Index

From the title index, you can see descriptions of courseware materials and, in some cases, try the actual lessons. The following steps describe how to move through the title index.

1. You can page through the index in sequential alphabetical order (a, b, c, and so on), or you can quickly move to any part of the index (for example, from b to s). Press NEXT to advance the index alphabetically one page at a time and press BACK to reverse the index one page at a time.

2. To move quickly to a different alphabetical point in the index, type a few letters of the part of the alphabet you want to see and press NEXT. For example, if you want to see titles that begin with ple, type ple and press NEXT.

3. You can type a specific lesson title and press NEXT to see that specific lesson.

To see the description of courseware materials or to have the option to try a lesson, type the number in front of the title on which you want information and press NEXT. The system displays the Lesson Information display (figure 4-19).


```
Neuron structure and function

BY:  Stephen H. Boggs
     University of Illinois

COPYRIGHT DATE: 1975                    FILENAME: 0neurons
LIBRARY TYPE: Academic

This learning activity uses graphics to explain the structure
and function of neurons and the way in which they transmit
information.


          (a)  Further Information     (b)  Authors




     Press the letter of the option you wish to select.
        >




     LAB to try this item
     SHIFT-NEXT/SHIFT-BACK to move       BACK to exit
```

Figure 4-19. Lesson Information Display

The Lesson Information display contains a brief description of the lesson; the name of the primary author(s) of the lesson; the copyright date; the file name; the library type; and options to select to see more information on the lesson, the names of all the lesson authors, and general ordering information. Press LAB to try the lesson.

When you select the further information option from the Lesson Information display, the system displays the Lesson Description display (figure 4-20). The Lesson Description display contains a more detailed description of the lesson, the estimated length of time it takes to complete the lesson, the type of learning materials used, the type of audience the lesson is intended for and, where applicable, a list of contents and a goal statement.


```
                        Further  Information

ESTIMATED LENGTH:   3Ø minutes
   1ØØ% CAI

INTENDED AUDIENCE:

  Beginning biology or medical science students,
  accelerated high school or college level.

DESCRIPTION:  .

The lesson is divided into five parts.  Each part presents a
simulation, with which the student may interact, of the dif-
ferent parts of a neuron and how they function.

CONTENTS:

Neuron Structure - The five major parts of a neuron are pre-
   sented and reviewed.
Action Potentials - The manner in which a neuron transmits
   information is demonstrated.
Threshold Experiment - A simulation in which the student learns
   about threshold values needed to fire a neuron.
The Synapses - A simulation of the means by which neurons com-
   municate and the various means (i.e. neurological poisons)


               Press  NEXT  to continue

BACK-go to previous page       SHIFT-BACK  go to options index
LAB to try this item
```

Figure 4-20. Lesson Description Display

Author Index

The author index alphabetically lists all the authors of published PLATO-based courseware. From the author index, you can see biographical information about authors and the titles of lessons written by individual authors.

You can page through the author index in sequential alphabetical order or you can quickly move to any part of the index by following the procedure described in the title index.

To see the titles of lessons written by an individual author, type the number in front of the author's name and press NEXT. The system displays a list of titles of lessons written by that author. This title display functions the same as the title index described previously.

To see biographical information about an author, type the number in front of the author's name and press DATA.

Subject Index

The subject index alphabetically lists keywords which relate to the subjects of PLATO-based courseware. Keywords summarize the subject of a lesson. To find materials in the subject index, think of a keyword which summarizes the topic you are interested in. Type that keyword at the arrow on the Subject Index display and press NEXT. You can also page through the index alphabetically to see the entire listing of courseware subjects. Press NEXT to advance the listing one display at a time, or press BACK to reverse the listing one display at a time. You can also jump to any part of the index (for example, from b to g) by typing the letter(s) of the part of the index you want to see.

After you find a subject of interest, you can see the titles of lessons relating to that subject. Type the number in front of the subject (keyword) and press NEXT. The system displays a list of titles relating to that subject. This title display functions the same as the title index described previously.

File Name Index

The file name index alphabetically lists the file names of all the published PLATO-based courseware materials.

From the file name index, you can see the title, author, and library type of the lesson. From this index, you can also request to see more information on a specific lesson by typing its file name.

To see more information on a specific lesson, type the number in front of the desired lesson and press NEXT. To move to another part of the index, type the letter(s) of the alphabet from where you want the listing to start and press NEXT.

USING THE ON-LINE AUTHOR LISTING

As an author or instructor, you can see a listing of all authors on the PLATO system who have voluntarily included their names in the listing and include your name in the listing if you choose. Information available in the author listing includes: each author's full name, principal sign-on(s), office and home phone numbers, mailing address, and authored subjects.

The following steps describe how to access and use the on-line listing of PLATO authors.

1. Do one of the following steps, depending upon your user type.

   ● From the Author Mode display (for authors), type authors and press NEXT.

   ● From the PLATO Facilities display (for instructors), select the Choose a Lesson to Study option. Type authors at the What Lesson arrow and press NEXT.

2. The system displays the Directory of PLATO Authors display (figure 4-21). From this display, you can do any of the following steps.


```
                    Directory of PLATO Authors

                          minnc system




      Enter partial name
         or name/group      >




              Press  NEXT  for alphabetical listing
                     DATA  for another system
                     LAB   for lesson statistics
                     HELP  for information
```

Figure 4-21. Directory of PLATO Authors Display

- Type either the name of the author on which you want to see information and press NEXT, or type the letter of the alphabetical listing you want to see and press NEXT.

- Press NEXT to see the Alphabetical List of Authors display (figure 4-22).

- Press DATA to see the author listing for another PLATO system.

- Press HELP for more information on how to use the On-Line Author Listing.

```
              Alphabetical List of Authors

                       minne system

              ┌─────────────────────────────┐
              │      Full Name of Author     │
              ├─────────────────────────────┤
              │                             │
              │   allen, michael w.          │
              │                             │
              │   aspnes, gordon g           │
              │                             │
              │   auld, warren e.            │
              │                             │
              │   bartlett, judith a         │
              │                             │
              │   battin, jim                │
              │                             │
              │   berigan-pirro, denise      │
              │                             │
              │   beringer, dennis b.        │
              │                             │
              │   boggs, stephen h.          │
              │                             │
              └─────────────────────────────┘

          Enter partial name    >
            or name/group



              DATA   for another system
              HELP   for information
```

Figure 4-22. Alphabetical List of Authors Display

You can see an alphabetical listing of PLATO courseware subjects from the Directory of PLATO Authors display. To see the subject listing, press SHIFT, type X, and press NEXT to see the listing starting at the beginning of the alphabet. Press HELP for more information on how to use this feature.

To include your name in the author listing or to change your biographical information, press SHIFT-NEXT from the Directory of PLATO Authors display. Type the letter in front of the information you want to include or change, type the information at the arrow, and press NEXT. Press LAB to change information not preceded by a letter.

USING THE PLATO USER LIST

The PLATO User List displays the names of all users who are currently signed on to the PLATO system and have voluntarily included their name in the list.

The following steps describe how to see the list.

    1. Do one of the following steps, depending upon your user type.

        ● From the Author Mode display (for authors), either press SHIFT and type U, or type users and press NEXT.

        ● From the PLATO Facilities display (for instructors), select the Interactive Communications option and then select the See Users on the System option.

    The system displays the Total Users display (figure 4-23).

```
                    Total users on system = 65


           Enter:   a physical site number,
                     a group name,
                     a user's name/group,
                or   a site-station number.




                  >




        Or press:   NEXT     (alone) to see all sites
                    DATA     to see users at your logical site
                    LAB      to display records/talk flag information

               SHIFT-DATA    to see a list of operations personnel.


                         HELP available
```
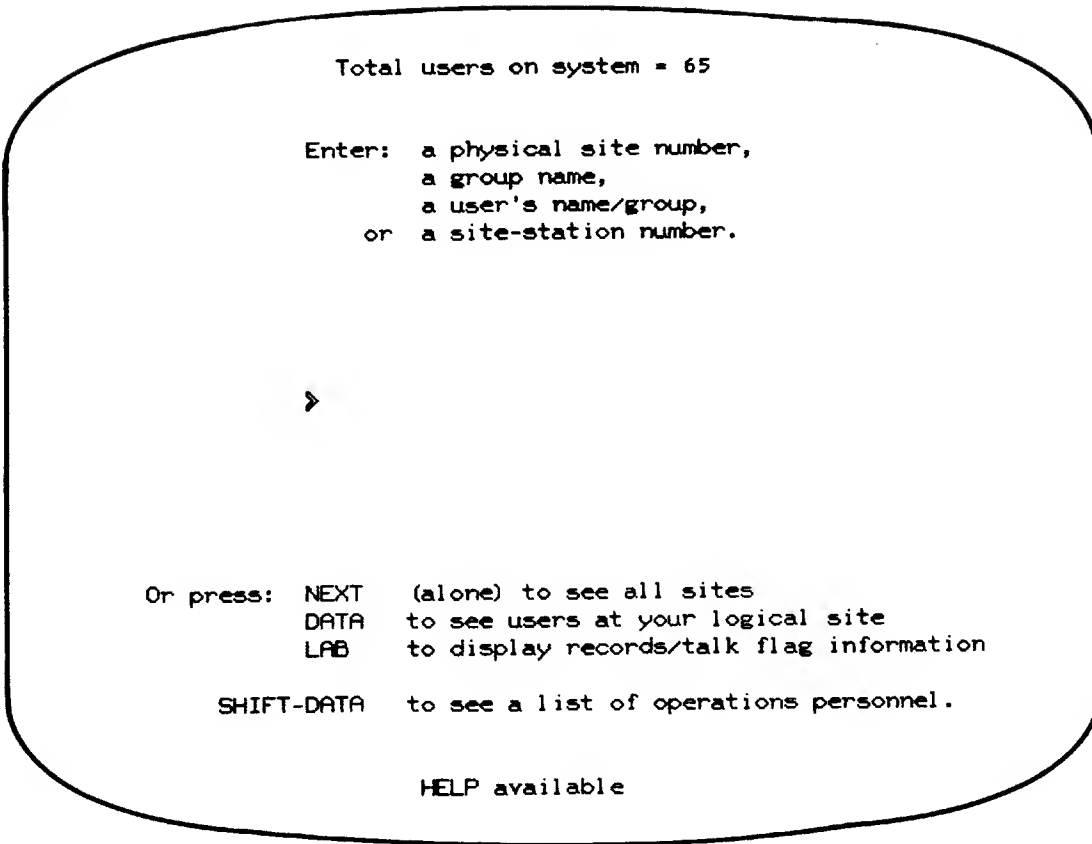
Figure 4-23. Total Users Display

2. Choose any of the following options from the Total Users display.

- Press HELP for more information.

- Press LAB to set your user list options.

- Press DATA to see the users at your logical site (those users with whom you share ECS/ESM).

- Type a physical site number and press NEXT to see a list of the users at your physical site (a grouping of terminals related by communications hardware).

- Type a group name to see the users signed on from that group.

- Type a site station number (the number assigned to a specific terminal) to see who is using it.

USER STATISTICS AND FLAG SETTINGS

The PLATO system records system use statistics for each author and instructor on the PLATO system. The type of statistical information recorded includes the amount of time you have spent using the system (both total time and individual sessions); information about your user record, such as your user type, account name, logical site, and so on; and use of the central processing unit (CPU) and disk resources.

In addition to keeping statistics on system use, the PLATO system also keeps a record of your user flag settings. These flag settings allow you to indicate to the system whether or not you want to use the TERM-talk feature, appear in the User List, or receive TERM-ask calls. You can set or change your user flags at any time.

To see information about your system use and flag settings, either press LAB from the Total Users display (figure 4-23), or type I (hold the SHIFT key down and type i) from the Author Mode display or the PLATO Facilities display (Choose a Lesson to Study option). Press HELP for more information about these displays.

TIME-SAVING FEATURES

There are a number of features available on the PLATO system which serve as useful tools and time-saving conveniences. Many of these features are called TERMS because the TERM key is used to access them. Some TERMS tell the time of day, perform mathematical calculations, allow you to comment on a lesson, or provide the correct spelling of a word. These TERMS are: TERM-time, TERM-calc, TERM-comment, and TERM-spell, respectively. Refer to Checking the Time, Doing Mathematical Calculations, and Commenting on Lessons in section 2 to learn how to use TERM-time, TERM-calc, and TERM-comment. The following paragraphs describe how to use TERM-spell.

| NOTE |

As an author, you can code your lessons to prohibit a specific TERM from working in your lesson. Generally, this coding technique is used only when use of the TERM would defeat the objectives of the lesson. TERMS can be prohibited from working in either the entire lesson or certain parts of the lesson.

Refer to AIDS for more information on how to prohibit TERMS using the -termop- command.

TERM-spell

You can check the correct spelling of a word by using the TERM-spell feature. TERM-spell asks you to type the word you need the correct spelling of, as close as possible to the correct spelling. The system then shows you three words from its listing which are closest to that spelling. If none of these words match, you can see a list of words which precede or follow those displayed. To use TERM-spell, follow these steps.

1. Press TERM (hold SHIFT key down while pressing TERM/ANS key). The system displays What term? > .

2. Type spell and press NEXT. The system responds with word: (>).

3. Type the first few letters of the word you want the correct spelling of and press NEXT. For example, if you need the correct spelling of the word horizon, type hori and press NEXT. The system displays three words from its listing which most closely match your entry.

4. If none of the words match, you can advance or reverse the listing to see words preceding or following those displayed.

   a. Press NEXT to advance the listing to the three words which alphabetically appear after the words displayed. Continue pressing NEXT to advance the listing.

   b. Press BACK to reverse the listing and see the three words which alphabetically appear before the words displayed. Continue pressing BACK to reverse the listing.

5. Press SHIFT-BACK to return to your previous activity.

USING DOCUMENTATION FEATURES

The PLATO system provides three features which assist authors in writing and printing text materials and creating displays. These features are the documentor file, the Graphics Utility for Interactive Documentation Ease (GUIDE), and the print request feature. A documentor file allows users to write and store text in the file. Documentor files, as well as other types of files, can be printed out on hard copy using the print request feature. The GUIDE feature allows users to create graphic displays quickly and easily without requiring the user to know the PLATO Author Language to do so.

The following paragraphs describe these features and how to use them.

USING DOCUMENTOR

Documentor is a file on the PLATO system which can be used as a tool for organizing, editing, and presenting text-oriented material. As a text organizing and editing facility, it significantly reduces the amount of time required to write, review, and polish a document. Documents that change frequently can be kept current on a documentor file with the latest version available to anyone with access to the file.

As an author or instructor, your account director must create the documentor file for you (unless you have account director authority). After the file is created, you can access documentor one of two ways, depending upon your user type. [As an author, you can access the file from the Author Mode display. Type the name of the file and press NEXT. Type the security codeword (if required) and press NEXT. As an instructor, select the Choose a Lesson to Study option from the PLATO Facilities display, type the name of the documentor file, and press NEXT.]

After you gain access to the documentor file, the system displays the Section Index display (figure 4-24). From the Section Index display, you can create sections within your documentor file as well as read or edit these sections. Press HELP for information on how to do this, as well as for a complete list and description of options available in documentor.

```
Document dintro                                    INSPECT ONLY

  a  4   Major Section/Subsection Indexes
  b  4.1   Format of Commands
    c  4.1.1   Section Commands
    d  4.1.2   Adding a Single Section ("a")
    e  4.1.3   Adding Multiple Sections ("A")
    f  4.1.4   Copying a Section ("c")
    g  4.1.5   Deleting a Single Section ("d")
    h  4.1.6   Deleting Multiple Sections ("D")
    i  4.1.7   Editing a Section ("e")
    j  4.1.8   Listing Sections ("l")
    k  4.1.9   Renumbering a Section ("n")
    l  4.1.10  Renumbering Multiple Secs. ("N")
    m  4.1.11  Saving a Section ("s")
    n  4.1.12  Retitling a Section ("t")
    o  4.1.13  Reading a Section ("r")

  ** CONTINUED **




  What command >
  HELP available
```

Figure 4-24. Documentor Section Index Display

The editing directives used to edit a documentor file are similar to those associated with the standard editor, with some exceptions. One major difference is the delete directive. In a documentor file, you can delete lines by specifying the number of the line or lines you want deleted and press SHIFT-HELP. Lines are not deleted from the top of the display as they are when using the standard editor. For example, if lines 1 through 30 are visible on your screen and you want to delete lines 15 and 16, type d15-16 and press SHIFT-HELP. For more information on documentor editing directives, press HELP while editing a section.

A complete description of documentor and how to use it is available in the PLATO lesson "dintro". Study the lesson to learn more about documentor and its uses.

GRAPHICS UTILITY FOR INTERACTIVE DOCUMENTATION EASE (GUIDE)

As an author, you can create and edit graphic displays using the Graphics Utility for Interactive Documentation Ease (GUIDE). Displays created using GUIDE can be linked together for interactive documentation. The documentation produced using GUIDE functions in much the same manner as AIDS does.

Using GUIDE, you can easily create and edit graphic displays using an editor similar to ID/SD and the PLM graphics editor. Displays can be linked together for interactive use by specifying where to branch when a key is pressed. GUIDE can also be used to quickly produce mock lesson displays or displays to be copied for use as overhead or hardcopy graphic documents. No knowledge of the PLATO Author Language is required to create complex graphics or to specify branching.

The GUIDE package provides both an editor and a driver. Execution of the editor provides an authoring mode, while execution of the driver provides student mode.

The editor is similar to the TUTOR file graphics editor, but has many human interface and convenience enhancements. Use of only the editor component is valuable for easy creation and modification of displays to be copied for use as overhead transparencies or hardcopy graphic documents.

GUIDE provides complete freedom in the creation and formatting of all displays, including indexes. No existing visual structures or formats are imposed on the user.

GUIDE's driver capabilities allow branching from one display to another. Jumpouts to PLATO lessons are also possible. Special index displays allow presentation of menus when use of function keys (for example, DATA, BACK, LAB) for branching is not sufficient.

The GUIDE driver provides a mechanism that automatically tracks each user's path through a display sequence. With this mechanism, successive presses of BACK can automatically route the user through displays previously seen — whatever branching options he/she may have chosen. As a result, review sequences are very easy to provide. Display replotting is also an automatic feature.

GUIDE contains its own extensive HELP sequence, providing detailed how-to information within the editor, similar to the detailed HELPs that authors find in the TUTOR file editor. Unlike the TUTOR file editor, users will find more help and will need less prerequisite knowledge to begin using the GUIDE system.

To use the GUIDE system to produce documentation interactively, a user needs a nameset with 20 character names and 64 word records. One can set lesson "guide" as the processor lesson of a given nameset. Authors can also type guide on the Author Mode display, press DATA, and enter the name of a nameset. Instructors can choose the Choose a Lesson to Study option on the PLATO Facilities display, and, at the What lesson arrow, enter guide and press NEXT.

The GUIDE system allows both typeable and ACCOUNT and GROUP codewords. Setting lesson "guide" as the processor lesson is recommended when using ACCOUNT and GROUP codewords; in such cases, Special read/write access must be set.

For more information on GUIDE and to learn how to use it, study the PLATO on-line lesson "guideaids" (type guideaids on the Author Mode display and press DATA or select the Choose a Lesson to Study option on the PLATO Facilities display and type guideaids).

REQUESTING PRINTS

The print feature allows users to request prints of files from the central site (central prints) or to print a file or make copies of displays on the PLATO terminal screen using a printer attached to a PLATO terminal (local prints). In order to request central prints, a user's account must contract to use the print feature. No contractual agreements are necessary for local prints.

The following steps describe how to request central prints and make local prints.

```
NOTE
```

If your account is part of Control Data Services Systems, the prints option on your author or instructor record should be turned on and you should contact your account director to request prints.

To request a central print, do the following steps.

1. Do one of the following steps, depending upon your user type.

    ●   From the Author Mode display (for authors), either type prints and press DATA, or press SHIFT and type R.

    ●   From the PLATO Facilities display (for instructors), choose the Request a Print option by typing the letter in front of the option.

    The system displays the Print Requests display (figure 4-25).

```
          --- P R I N T     R E Q U E S T S ---

    Choose an Option...


           a)   REQUEST a Printout


           b)   Check STATUS of Print Request


           c)   Check Printer STATUS


           d)   Print using a printer attached
                to your terminal  (local printer)




                    HELP is available
```
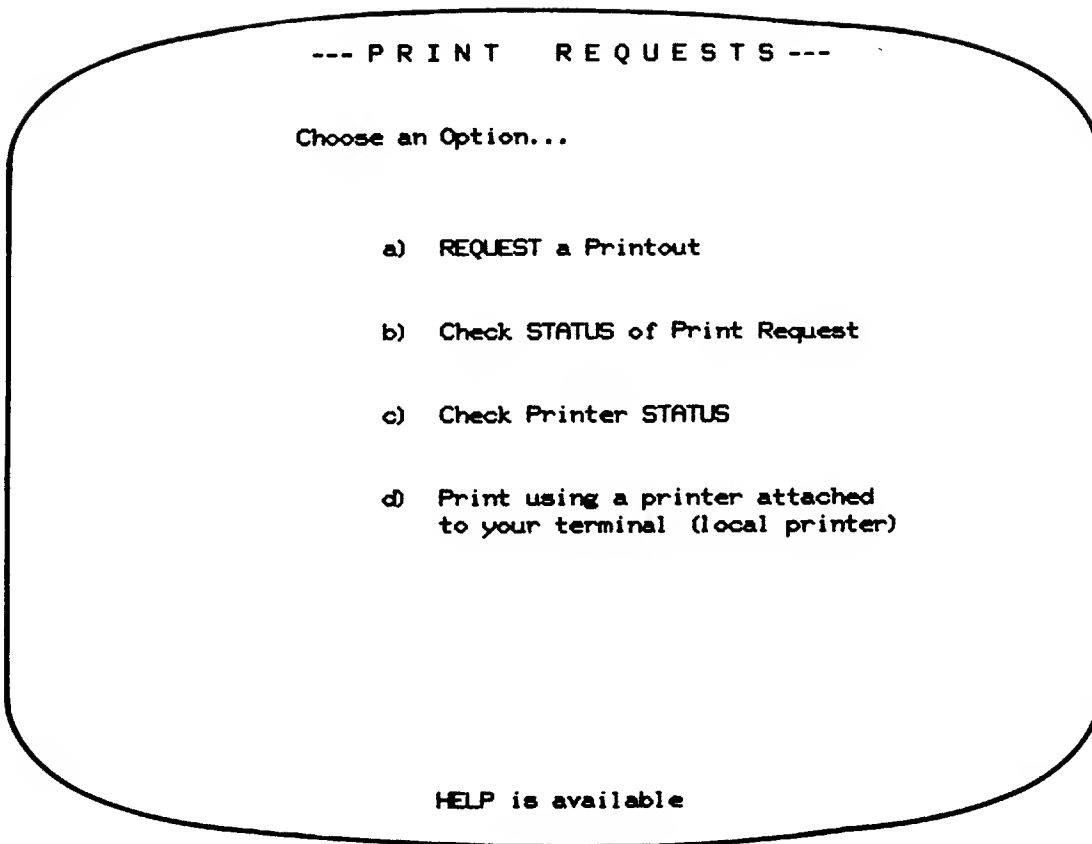
Figure 4-25. Print Requests Display

2. Press HELP for more information on how to request prints.

3. Choose the Request a Printout option by typing the letter in front of that option. The system asks what file you want printed.

4. Type the name of the file you want printed and press NEXT. The system asks for the security code of the file (if required).

5. Type the security code (if required) and press NEXT. The system displays a print selection display. This display allows you to choose which sections of your file you want printed. You can choose to print the entire file, including the title page, outline, and text (if printing a documentor file), or choose any combination of these and selected sections of the file. Follow the instructions on the display to choose the parts of the file you want printed. Press SHIFT-NEXT when finished.

6. Type your name and mailing address. Press SHIFT-NEXT when finished. The system tells you when the file will be printed.

To check the status of a print request made previously, do the following steps.

1. Choose the Check Status of Print Request option from the Print Request display.

2. Type the name of the file on which you want a status report and press NEXT.

3. The system displays a message stating whether or not the print has been made. The system also provides the option to cancel a request if the file has not been printed as of that time.

You can also check the current availability of the line printer by choosing the Check Printer Status option from the Print Request display.

To request a local print, do the following steps.

1. Do one of the following steps, depending upon your user type.

   ● From the Author Mode display (for authors), type print and press DATA.

   ● From the PLATO Facilities display (for instructors), select the Choose a Lesson to Study option, type print, and press DATA.

<div align="center">

┌─────────┐
│ NOTE   │
└─────────┘

Authors and instructors can also request local prints by choosing the Print Using a Printer Attached to your Terminal (Local Printer) option from the Print Requests display (figure 4-25).

</div>

2. Do one of the following steps, depending upon the type of print you want.

   ● To print an entire file, choose the Print a File Using a Printer Attached to your Terminal option by typing the letter in front of that option. The system displays several options. Press HELP for an explanation of these options.

   ● To make copies of screen displays, choose the Make Copies of the Screen Using a Printer Attached to your Terminal option by typing the letter in front of that option. The system displays two screen copy options. Choose the option which corresponds to the type of printer attached to your terminal by typing the number in front of the option.

WRITING PLATO LESSONS

Authors write lessons for central PLATO system delivery using a computer language called the PLATO Author Language (lessons written for Micro PLATO delivery use the Micro PLATO Language). The lessons for both central and Micro PLATO delivery are written and stored in files on the PLATO system. A file contains a collection of data which is stored in a reserved space in the PLATO system. File lengths vary according to the amount of computer memory space reserved for each file.

The PLATO system has several types of files for authors to use, depending upon their needs. The type of file used to write lessons is a TUTOR file. A TUTOR file is composed of parts and blocks. Parts and blocks are subdivisions within a TUTOR file. Each file contains at least one part. Each part contains up to seven blocks. Each block can store 320 computer words. The number of parts in a file determines the length of the file. A one-part file contains 7 blocks, a two-part file contains 14 blocks, and so on. TUTOR files can contain a maximum of 10 parts or 70 blocks.

The block is the part of the file in which authors write the code for the lesson. There are several types of blocks authors can use for their lessons. The most common block type used for writing lessons is the TUTOR block. The TUTOR block holds the lesson code. Other block types, which the author uses in conjunction with the TUTOR block in writing a lesson, perform specific functions. Some blocks allow authors to create graphic characters (charset blocks, lineset blocks) and store documentation for the lesson (text block). Some blocks have time-saving functions and others have creative functions. These block types are described in Using Other Block Types later in this section.

When a file is created, the person creating the file determines the length of the file, or how many parts to assign to the file. If you, as an author, have account director capabilities, you can create your own TUTOR file and determine its length. If you do not have account director capabilities, your account director can create a TUTOR file for you. Remember to tell your account director how many parts to include in the file. Refer to Creating Files in section 5 to learn how to create your own files if you have account director capabilities.

USING THE TUTOR LESSON FILE

After you or your account director create a TUTOR file for you to use, there are some things you should do to protect the file. These procedures are similar to those an instructor does when using a group file. They involve registering information about yourself and your lesson and assigning security codewords to the file. The following paragraphs describe how to do these procedures.

Registering Author and Lesson Information

Each TUTOR file has a directory which allows you to register and store information about you and your lesson. This display is the Author Information display (figure 4-26). The first time you access your TUTOR file by typing the name of your TUTOR lesson file from the Author Mode display and pressing NEXT, the system displays the Author Information display. Enter information for all the entries on this display, particularly the one-line description. If you do not, the system returns you to this display each time you access the file until all information is entered. Completing all entries on this display also prevents your file from being inadvertently destroyed by your account director during a routine file cleanup. If you are uncertain about the kind of information to include in the one-line description of the Lesson Information section, simply type something which indicates the purpose of the file. To enter information on the Author Information display, type the number in front of the entry you want to access, type your information, and press NEXT.

After information has been entered on the Author Information display, you will no longer be brought directly to this display each time you enter the file. From thereon, the Block Listing display (figure 4-27) appears each time you access the file. To reach the Author Information display from the Block Listing display, press DATA or choose the *directory option on the display.

```
        Lesson name ---- english

        Account -------- cbedd




   Press the associated number to change an entry.

   Author Information:
        1. Name --------------- jane doe
        2. Dept./Affiliation -- english
        3. Telephone number --- 221-3221

   Lesson Information:
        4. Subject Matter ----- literature
        5. Intended Audience -- high school seniors
        6. One line description ----------
 ≫ examines literature during the early 1800's
```

Figure 4-26. Author Information Display

```
 LESSON--english                        HELP available




              BLOCK  NAME

          -   a      *directory
              b      grammar
              c      spelling
              d      sentences
              e      letters
     chars   f    ** one
```

Figure 4-27. Block Listing Display

Assigning Security Codewords

You can protect your file from access by unauthorized users by assigning security codewords to the file. Security codewords control which users can see or change the contents of the file. As an author, it is your responsibility to create and set codewords to your files. Codewords are similar to passwords in that they control which users can see or change the lesson code in the TUTOR file. Codewords can be set to allow specific users or specific user types access to the file. For example, you can set the codewords so only you can see or change the file, so only specific users you choose can see or change the file, or so only authors in your group or account can see or change the file. Examples of the different types of security codes you can set are:

Typed code	Requires all users to type the file's security codeword to see and/or change the contents of the file.
GROUP code	Allows all authors within the group to see and/or change the contents of the file without typing the codeword first.
ACCOUNT code	Allows all authors whose groups are listed within an account to see and/or change the contents of the file without typing the codeword first.
Unmatchable code	No security code of any sort can match this; no access by any other file is possible. This codeword is automatically assigned to newly created files for all codes other than the change and inspect codewords. These security codes are assigned by the system to prevent accidental accesses to databases before authors have had an opportunity to assign appropriate security controls. In addition, an author or account director can assign unmatchable codes to any codeword of any file; this would prevent any author from making any changes to that file. If used for the common code of a lesson, that lesson and only that lesson can connect to commons and leslists stored within that file.

It is important to be creative when assigning codewords. If you use a typed code, be sure it is something no one can guess. Do not use obvious codes like your spouse's name; the name of your group, account, or file; your pet's name; your password; your telephone number; a period; a, b, c, and so on. Choose something with which only you can identify. Change your typed codewords frequently to prevent the possibility of someone guessing them. Examples of good codewords are misspelled words of at least seven characters, or words which have numbers inserted in them.

If you use a GROUP or ACCOUNT code, access to the file is limited only to people in your group or account. Although this limits the number of people who can access your file, it makes your sign-on password extremely important because access to the file is based on who you are rather than what you know. Therefore, it is very important to protect your sign-on password by making sure it is a creative password which no one can guess. Remember, do not use obvious passwords which are familiar to anyone, and change your password frequently.

Each TUTOR file contains a display which allows you to register and store security information. This display is the Security Codewords display (figure 4-28). When a TUTOR file is created, the Security Codewords display may be blank. Account owners may choose to assign default codewords in their accounts. Default codewords are placed automatically on all files created within an account. Usually, default codewords only provide a limited security level because they are placed on all files. The default codewords of all newly created files should be evaluated to assure each file has a security level matching its function. You should set or evaluate the codewords on the Security Codewords display as soon as the file is created to prevent other users from seeing or changing the file. The following steps describe how to access the Security Codewords display and assign codewords in the TUTOR file.

```
        Lesson name ---- english

        Account -------- cbedd




   Press the associated number to change an entry.

   SECURITY CODES:
          1. To change lesson ----     **********
          2. To inspect lesson ---     **********
          3. To access common ----     No match permitted
          4. To -use- lesson -----     No match permitted
          5. To -jumpout- to -----     No match permitted
          6. To -attach- a file --     No match permitted

   Access to file by system personnel:
          7. System Access -------     ALLOWED
```
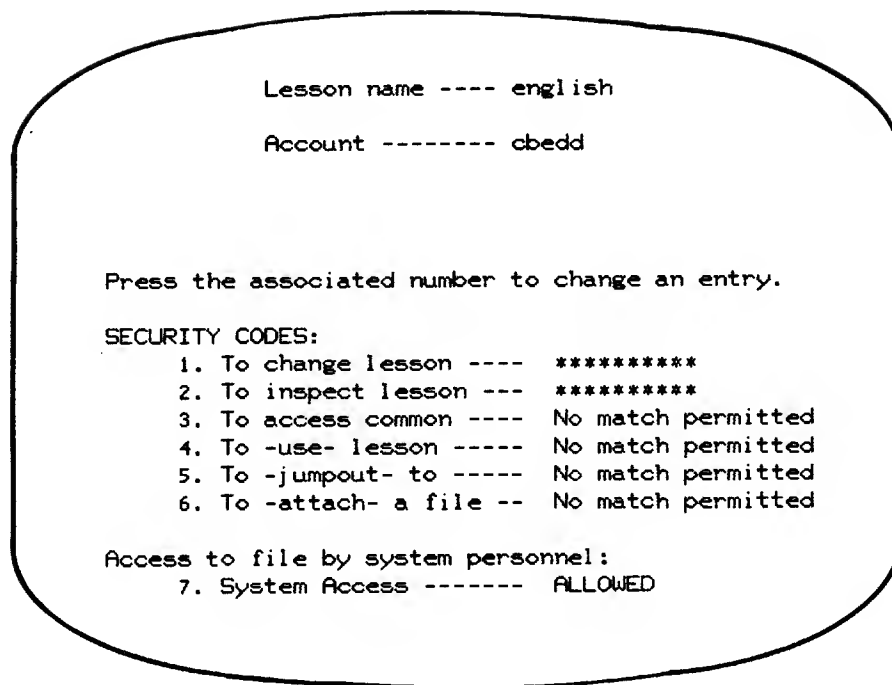
Figure 4-28. Security Codewords Display

1. From the Author Mode display, type the name of your TUTOR file and press NEXT. The system displays the Block Listing display (figure 4-27). This means some author information, and possibly account or group security codes, have already been entered in the file's directory.

    a. Press DATA to see directory information.

    b. Choose the Security Codewords option. If no security codes exist (Blank – open to all), immediately assign codewords. If general security codes, such as ACCOUNT or GROUP codes, have been assigned, consider their appropriateness for the file. Ask yourself whether or not such a large group of authors should have access to change or inspect the file.

To assign security codewords, do any of the following.

● The To Change Lesson option allows you to determine which users or group of users can access and change (edit) your lesson code. To choose this option, type the number in front of it. Do one of the following steps, depending upon the type of user access you want to allow.

    –   To allow access to yourself only or to a small group of people who know the codeword, type a codeword and press NEXT. A random number of X's appear to the right of the arrow as you type. The system asks you to retype the codeword to verify it and help you remember it. Press NEXT.

    –   To allow access to all authors in your group, press LAB. The system responds by displaying a GROUP option and an ACCOUNT option. Type the number in front of the GROUP option.

- To allow access to all authors in your account, press LAB. The system responds by displaying a GROUP option and an ACCOUNT option. Type the number in front of the ACCOUNT option.

- To restrict access to all users, press LAB. Type the number in front of the unmatchable code option.

● The To Inspect Lesson option allows you to determine which users or group of users can read but not change your lesson code. To choose this option, type the number in front of the option. Follow the instructions in step 2 for assigning codewords.

<div style="text-align:center">

┌─────────┐
│ **NOTE** │
└─────────┘

Choose a different codeword than the change codeword if you want users to see but not change your lesson code.

</div>

● The To Access Common option allows you to access any common block of this or another TUTOR file and use the data contained in that common block in your lesson. To do this, the security codewords for your access common option and the access common option of the file you want to access must match. To choose this option, type the number in front of it. Follow the instructions in step 2 for assigning codewords. The option also controls access to leslist blocks.

● The To -use- Lesson option allows you to use the code contained in another TUTOR lesson file in your lesson. To do this, the -use- lesson codewords for the files must match. To choose this option, type the number in front of it. Follow the instructions in step 2 for assigning codewords.

● The To -jumpout- To option allows you to control which lessons can be reached from your lesson and also control whether other authors can -jumpout- to your lesson. To do this, the -jumpout- codewords for both files must match. To choose this option, type the number in front of it. Follow the instructions in step 2 for assigning codewords.

● The To -attach- to a File option allows you to manipulate or change information in one file by executing code residing in another file. To do this, the codewords for the files must match. To choose this option, type the number in front of the option. Follow the instructions in step 2 for assigning user access.

● The System Access option allows you to choose whether or not to give systems personnel access to your TUTOR file. Systems personnel (users responsible for maintaining the PLATO system) occasionally need access to files to check for errors if hardware problems occur on the system. If you choose to allow systems personnel access to your file, authorized users can access the file in inspect mode, without typing a security code. Type the number in front of this option to change the option.

EDITING TUTOR FILES

Before you begin entering lesson code into your TUTOR file, you should know how to create a block in which to write and store your lesson code, how to use the PLATO system editor to enter and edit code, and how to receive help while editing your lesson. The following sections describe how to create a TUTOR block for writing and storing code, how to use the PLATO system editor, and how to get editing help.

Creating a TUTOR Block

The TUTOR block is the part of the TUTOR file in which you write lesson code. Each part of a TUTOR file contains space for you to create seven blocks. Each TUTOR block stores 320 computer words or approximately 50 lines of code.

The following steps describe how to create a TUTOR block.

1. From the Author Mode display, type the name of your TUTOR file and press NEXT. The system asks for the file security code (if you assigned typed inspect or change codes to the file).

2. Type the security codeword (if required) and press NEXT. The system displays the Block Listing display (figure 4-27). Notice that the Block Listing display lists only one block (a   directory). The block directory contains author and lesson information, file security information, and associated files and editing specifications information. This is the only block which is not used for writing lesson code. The block directory is reached by typing a or pressing DATA from the Block Listing display.

3. Create a block for writing and storing lesson code by typing the capital letter of the block which precedes the block you want to create. For example, to create your first block, type A since block a precedes the block you want to create. The system displays the Block Creation Options display (figure 4-29).

```
Press...

    NEXT for a normal TUTOR block
    LAB  for copy-a-block
>
    1    for a common block
    2    for a charset block
    3    for a micro block
    4    for a leslist block
    5    for a vocabulary block
    6    for a lineset block
    7    for a listing block
    8    for a text block
```
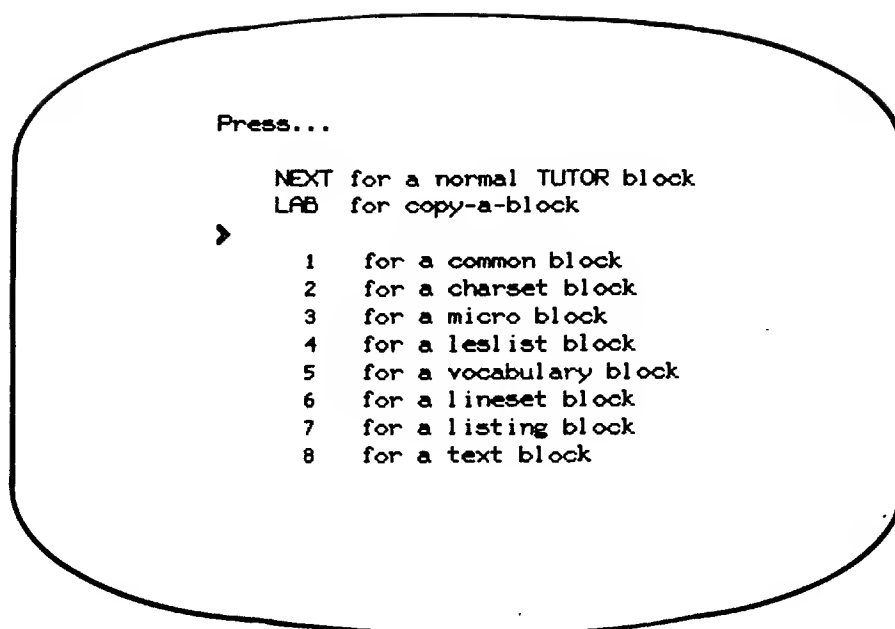
Figure 4-29. Block Creation Options Display

4. The Block Creation Options display gives you several options to choose from for block creation. Create a normal TUTOR block for entering lesson code by pressing NEXT. The system asks you to name the block you created.

5. Type a name for your block and press NEXT. If you are unsure of what to title your block, use test, workspace, or another name which indicates the purpose or subject of the block. The system displays your TUTOR Block display.

6. Do one of the following steps.

   ● If you are familiar with the PLATO Author Language and editing directives, and are prepared to enter lesson code, enter your code using the correct editing directives.

   ● If you are unfamiliar with the PLATO Author Language and editing directives, or are not prepared to enter lesson code at this time, type i and press NEXT. The system is now in insert mode. When the system is in insert mode, it is ready for you to enter code. Type an asterisk and press BACK.

| NOTE |

You must type something in a new block which the system can store or else the block is deleted from the Block Listing display.

The system displays the Block Listing display. Two asterisks indicate the last block you edited before returning to the Block Listing display.

The PLATO system editor allows you to insert and change the code you write in the blocks of your file. It allows you to enter, revise, read, and transfer your lesson code. The editor also tells you how much space is available in each block for you to enter code.

Special instructions are required to use the PLATO system editor. These instructions are called editing directives. These editing directives are similar to those authors use for writing notes. The following paragraphs describe the basic editing directives you should know before entering code in your TUTOR block. Refer to Requesting Editing Help later in this section for information on how to see detailed information on all the editing directives.

Inserting Code

The insert directive allows you to type lesson code into the TUTOR block. To use the insert directive, type i and the number of the line you want the new material to follow. Press NEXT. For example, to insert code after line 3, type i3 and press NEXT. To add code before line 1, type i0 and press NEXT. If the block is empty and this is the first time you are inserting any code, type i and press NEXT. You do not need to type a line number. When you are in insert mode, the system displays INSERT MODE at the top of the screen. The upper right corner of the display tells how much space is available for you to insert lines of code. After you finish inserting code, press BACK.

Replacing Code

The replace directive allows you to replace or change lines of code already entered in the block. To use the replace directive, type r and the number of the line you want changed. For example, to correct an error in line 3, type r3 and press NEXT. The system is now in replace mode. In replace mode, the system displays the line you want to replace with an arrow directly under it. You can either retype the entire line correctly or use the COPY and EDIT keys to edit the line. (Refer to appendix A to learn how to use the COPY and EDIT keys.) After you complete your corrections, press BACK.

Positioning Code on the Screen Display

The PLATO system displays 31 lines of text at one time. Since most lessons are longer than 31 lines, the system allows you to page through your code so you can see different parts of it. Each TUTOR block can store approximately 50 to 60 lines of code. You can think of these lines as being on a scroll, the scroll being viewed through a 31-line screen. The scroll can be rolled forward to show lines toward the end of the scroll, or it can be rolled backward to show lines toward the beginning of the scroll. An example of use of the forward and backward editing directives is in figure 4-30. There are several ways to move code on the screen. Two of the easiest ways are with the forward and backward editing directives.

```
                BLOCK 1-b = one              SPACE = 100
    1  unit      raven1
    2  at        510
    3  write     Once upon a midnight dreary,
    4            while I pondered, weak and weary,
    5            Over many a quaint and curious volume
    6            of forgotten lore--
    7            While I nodded, nearly napping,
    8            suddenly there came a tapping,
    9            As of someone gently rapping,
   10            rapping at my chamber door.
   11            "'Tis some visitor," I muttered,
   12            "tapping at my chamber door--
   13                Only this and nothing more."
   14
   15            Ah, distinctly I remember
   16            it was in the bleak December;
   17            And each separate dying eber
   18            wrought its ghost upon the floor.
   19            Eagerly I wished the sorrow;--
   20            vainly I had sought to borrow
   21            From my books surcease of sorrow--
   22            sorrow for the lost Lenore--
   23            Fore the rare and radiant maiden
   24            whom the angels name Lenore--
   25                Nameless here forevermore.
   26
   27  at        3040
   28  write     Press NEXT
   29  unit      raven2
   30  st        510
   31  write     And the silken, sad, uncertain rustling
```

FORWARD 12

```
                BLOCK 1-b = one              SPACE = 100
    1                Only this and nothing more."
    2
    3            Ah, distinctly I remember
    4            it was in the bleak December;
    5            And each separate dying eber
    6            wrought its ghost upon the floor.
    7            Eagerly I wished the sorrow;--
    8            vainly I had sought to borrow
    9            From my books surcease of sorrow--
   10            sorrow for the lost Lenore--
   11            Fore the rare and radiant maiden
   12            whom the angels name Lenore--
   13                Nameless here forevermore.
   14
   15  st        3040
   16  write     Press NEXT
   17  unit      raven2
   18  at        510
   19  write     And the silken, sad, uncertain rustling
   20            of each purple curtain
   21            Thrilled me--filled me with
   22            fantastic terrors never felt before;
   23            So that now, to still the beating of my heart,
   24            I stood repeating,
   25            "'Tis some visitor entreating entrance
   26            at my chamber door--
   27            Some late visitor entreating entrance
   28            at my chamber door;--
   29                This is it and nothing more."
   30
   31            Presently my soul grew stronger;
```

BACK 6

```
                BLOCK 1-b = one              SPACE = 100
    1            While I nodded, nearly napping,
    2            suddenly there came a tapping,
    3            As of someone gently rapping,
    4            rapping at my chamber door.
    5            "'Tis some visitor," I muttered,
    6            "tapping at my chamber door--
    7                Only this and nothing more."
    8
    9            Ah, distinctly I remember
   10            it was in the bleak December;
   11            And each separate dying eber
   12            wrought its ghost upon the floor.
   13            Eagerly I wished the sorrow;--
   14            vainly I had sought to borrow
   15            From my books surcease of sorrow--
   16            sorrow for the lost Lenore--
   17            Fore the rare and radiant maiden
   18            whom the angels name Lenore--
   19                Nameless here forevermore.
   20
   21  ot        3040
   22  write     Press NEXT
   23  unit      raven2
   24  st        510
   25  write     And the silken, sad, uncertain rustling
   26            of each purple curtain
   27            Thrilled me--filled me with
   28            fantastic terrors never felt before;
   29            So that now, to still the beating of my heart,
   30            I stood repeating,
   31            "'Tis some visitor entreating entrance
```

SAME LINE

SAME LINES

SAME LINE

Figure 4-30. Example of Forward and Backward Editing Directives

Forward

The forward directive is used to move lines of text forward on the screen. It can move line 31 on the screen to line 1 on the screen. To use the forward directive, type f and the number of lines you want the screen to advance. Press NEXT. For example, if lines 1 through 31 are visible on your screen, and you want to bring the three lines which follow line 31 to the top of the screen, type f31 and press NEXT. If you want to remove the first three lines of your current display from the screen and add lines 32 through 36 to the display, type f3 and press NEXT.

Backward

The backward directive is used to move lines of text backward on the screen. It moves the top lines of the screen toward the bottom of the screen. For example, if 31 lines of the middle part of your code are visible on the screen, and you want to see the last few lines of your code, type b and the number of lines you want the screen to reverse. Press NEXT.

Deleting Code

The delete directive allows you to delete lines of code from the top of your screen. To use the delete directive, type d and the number of lines you want deleted from the top of the screen. Press SHIFT-HELP. For example, to delete the top two lines of your code, type d2 and press SHIFT-HELP. Since the delete directive only deletes text from the top of your screen, use the forward and backward directives to position the line(s) you want deleted to the top of the screen. To delete line 3 only, type f2 and press NEXT to bring line 3 to the top of the screen. Type d or d1 (both have the same effect) and press SHIFT-HELP.

SHIFT-HELP is a special keypress used for deletions because it is unlikely to be pressed accidentally. One way to see that the system deleted the lines you requested is to look at the space available entry at the top of the screen. When text is deleted, the space available increases.

Saving Code

The save directive allows you to save code and move a copy of it within a block, between blocks, or between lessons. To use the save directive, type s and the number of lines you want saved from the top of the screen. Press NEXT. Lesson code is saved from the top lines of the screen down. For example, to save the top five lines on the screen display, type s5 and press NEXT. The system stores your code in a save buffer (a 320-word temporary storage place) and displays the number of words saved in the top right corner of the screen.

To insert the saved code in a new place, use the insert save directive. To use the insert save directive, go to the block (in the same or a different file) where you want the code inserted, type is and the number of the line after which you want the code inserted. Press NEXT. For example, if you want to insert the saved code following line 10, type is10 and press NEXT.

> **NOTE**
>
> The save directive can only be used once before you transfer the contents of the save buffer to a new block or file. If you save additional material before transferring the save buffer's contents, the system deletes the original contents and replaces it with the new information.

Appending Saved Code

You can insert additional material into the contents of a save buffer (up to a total of 320 computer words) by using the append directive. The append directive allows you to add more material without deleting the original information. To add more material to the contents of a save buffer, press SHIFT, type A, and type the number of lines you want saved. Press NEXT. For example, to append (save) lines 1 through 4, type A4 and press NEXT. The system includes the added information in the save buffer.

Restoring Changed Code

The out directive restores a block of code to the state it was in when you entered the block. It is often used to correct deletion mistakes. To use the out directive, type out. The system restores your code to the state it was in when you last entered the block.

Requesting Editing Help

If you have questions about editing procedures or do not remember how to use the editing directives while editing your TUTOR block, you can request help. To receive help while editing, press HELP. The system displays the Editing Help Index (figure 4-31). The Editing Help Index contains four options which provide specific information about different aspects of editing. Choose a particular option by typing the letter in front of that option. Press BACK from the Editing Help Index to return to your TUTOR block.

```
           Editing HELP


   1.   Introduction to Editing
           (What you need to know to get started)


   2.   Block Directory Options
           (Options available on the page listing
           the names of the blocks)


   3.   Line Display Options
           (Options available within the blocks)


   4.   Mod Word Options
```
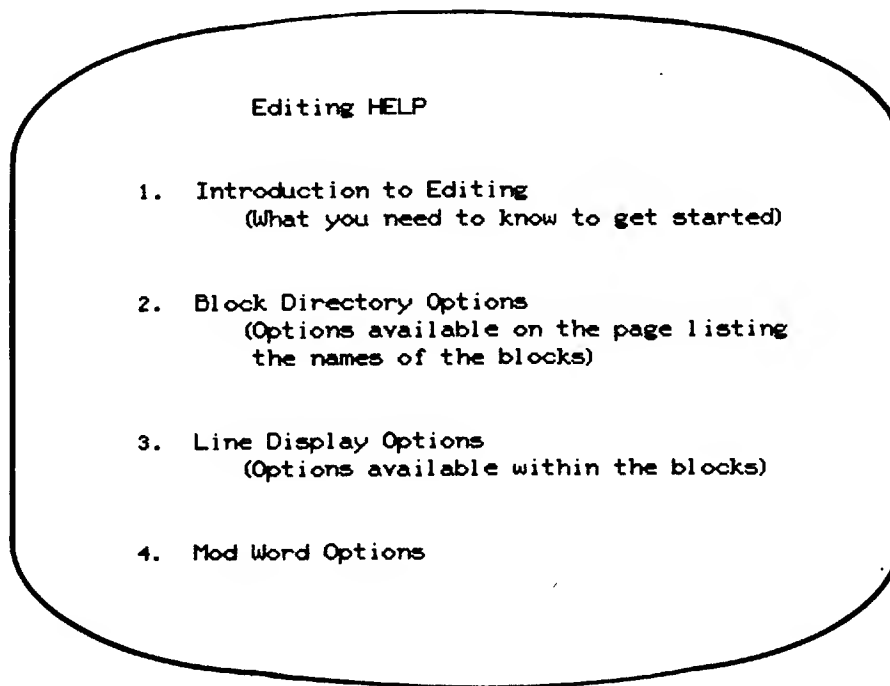
Figure 4-31. Editing Help Index

Other ways to receive editing help are TERM-consult and AIDS. TERM-consult allows you to communicate on-line with a PLATO consultant to ask questions and receive help. Refer to Consulting Help for Authors and Instructors earlier in this section to learn how to use TERM-consult. The AIDS on-line reference manual also contains information on editing procedures and directives. Refer to Using AIDS earlier in this section for more information on AIDS.

AIDS Quick Reference (Q-Ref)

If you are editing a TUTOR file and have a question about a PLATO Author Language or Micro PLATO Language command, you can see a short summary of information about the command by using the AIDS Q-ref (quick reference) feature. The Q-ref feature contains summarized reference information on the PLATO Author Language commands and displays the information on the same display as your lesson code. Q-ref is usually used by authors while coding lessons as a quick memory refresher for a particular PLATO Author Language command.

Q-ref can be accessed while you are editing any TUTOR file on the system. In addition to accessing Q-ref, you can also access the AIDS Index or What TUTOR Feature display while editing a TUTOR file. The following steps describe how to access Q-ref and AIDS.

1. To see a short summary of a PLATO Author Language command, type q and the name of the command on which you want information. Press NEXT. (For example, type qwrite and press NEXT to see a short summary of the -write- command.)

2. To see a detailed AIDS explanation of a specific PLATO Author Language command, type q and the name of the command on which you want information. Press SHIFT-NEXT. (For example, type qwrite and press SHIFT-NEXT to see the detailed information in AIDS on the -write- command.)

3. To access the AIDS What TUTOR Feature display, type q and press NEXT.

CONDENSING A LESSON

The PLATO system uses two major types of storage to store data: disk storage and extended core storage (ECS) or extended semiconductor memory (ESM). Disk storage is less expensive and can hold more data than ECS/ESM, but requires more time to access information. Therefore, disk storage is used for long-term storage, while ECS/ESM are used for short-term storage. ECS/ESM are used to store lessons that are being executed (used).

Disk storage holds more data than ECS/ESM because there is usually considerably more disk space available than ECS or ESM space. ECS or ESM, however, is required for any lesson being used. There are constraints on the amount of ECS or ESM that can be used by the condensed code of a lesson. Some constraints are absolute and cannot be exceeded. This absolute limit is the maximum allowed binary size of a lesson, currently 15 000 computer words. Each PLATO system has its own set of guidelines for determining how much ECS/ESM is considered a fair share for a lesson. Contact your account director or a PLATO consultant to learn what the ECS/ESM limits and fair share guidelines are for your system.

Lesson code is always stored on disk. When you edit your lesson, a copy of the specific block you are editing is brought into ECS/ESM. The original block is left on disk. When you indicate you are finished editing the block (by pressing BACK, for example), the updated copy of the block replaces the original one on disk. You should update your code frequently while editing to reduce the possibility of losing some of your code due to external system problems, such as a power failure.

When you or a student use your lesson, the PLATO system makes two copies of the PLATO Author Language code in your lesson block. Both copies are condensed into binary code which is shorter and easier for the system to read. One copy of the lesson binary code is stored on disk and the other copy is put into ECS or ESM and remains there as long as someone is using the lesson or longer, depending upon how much ECS or ESM is available to store unused lessons. Since the original PLATO Author Language code still remains on disk, you can edit a lesson at the same time it is being used by a student(s). The edited code, however, is not recondensed until the binary code stored in ECS or ESM is deleted, a new student requests the lesson, and the updated copy is brought into ECS or ESM.

If, while editing a lesson, you want to execute the lesson while a copy of the lesson resides in ECS or ESM, you can do one of two things. You can either execute the lesson as it exists in ECS/ESM (the form the lesson was in when it was condensed, without recent changes made to the disk copy), or you can recondense the lesson and execute the disk copy which includes recent changes. To execute the lesson as it exists in ECS/ESM, press SHIFT-LAB from either the Block Listing display or the line display. To recondense the lesson, press SHIFT-STOP from either the Block Listing display or the line display. If a student is using your lesson when you try to condense it, the system tells you that the lesson is being used and gives you the options of seeing which students are using your lesson, inspecting your lesson without condensing it, returning to editing your lesson, or condensing your lesson and removing the students from the lesson.

When you condense a lesson, the PLATO system makes a binary of your code and tests the code for programming errors. If you make a mistake which results in a line of code the system cannot interpret while coding your lesson, the system displays a Condense Error Message. A Condense Error Message tells you how many uninterpretable lines are in your code, the names of the units in which the errors are located, and the kinds of errors made. From the Condense Error Message, you can see detailed information about each of the errors and be taken directly to the errors in order to correct them. You should correct all condense errors and then recondense the lesson to make sure your changes are correct and your lesson is coded correctly.

To condense a lesson, press SHIFT-STOP from the line display or the Block Listing display.

CREATING DISPLAYS

The following paragraphs describe how to create graphic displays to use in PLATO lessons.

Screen Locations

The PLATO Author Language includes many commands which allow you to create displays such as pictures, animated sequences, and text. Most of these commands require you to specify where you want the display to appear on the PLATO terminal screen.

There are two ways to specify screen position: coarse grid and fine grid. Coarse grid divides the screen into 32 lines vertically and 64 characters horizontally (figure 4-32). The lines are numbered from top to bottom beginning with line 1. The spaces are numbered from left to right beginning with number 1. Positions on the coarse grid screen are identified by a three- or four-digit number. The first one or two digits of the number specify the line number and the last two digits specify the character position. For example, position 214 represents line 2 and character 14; position 1603 represents line 16 and character 3. Each character on the coarse grid screen is a matrix that is 8 dots wide and 16 dots high. Within these spaces, letters and parts of graphics are drawn by lighting different dots in each space. An example of how letters occupy spaces is shown in figure 4-33.
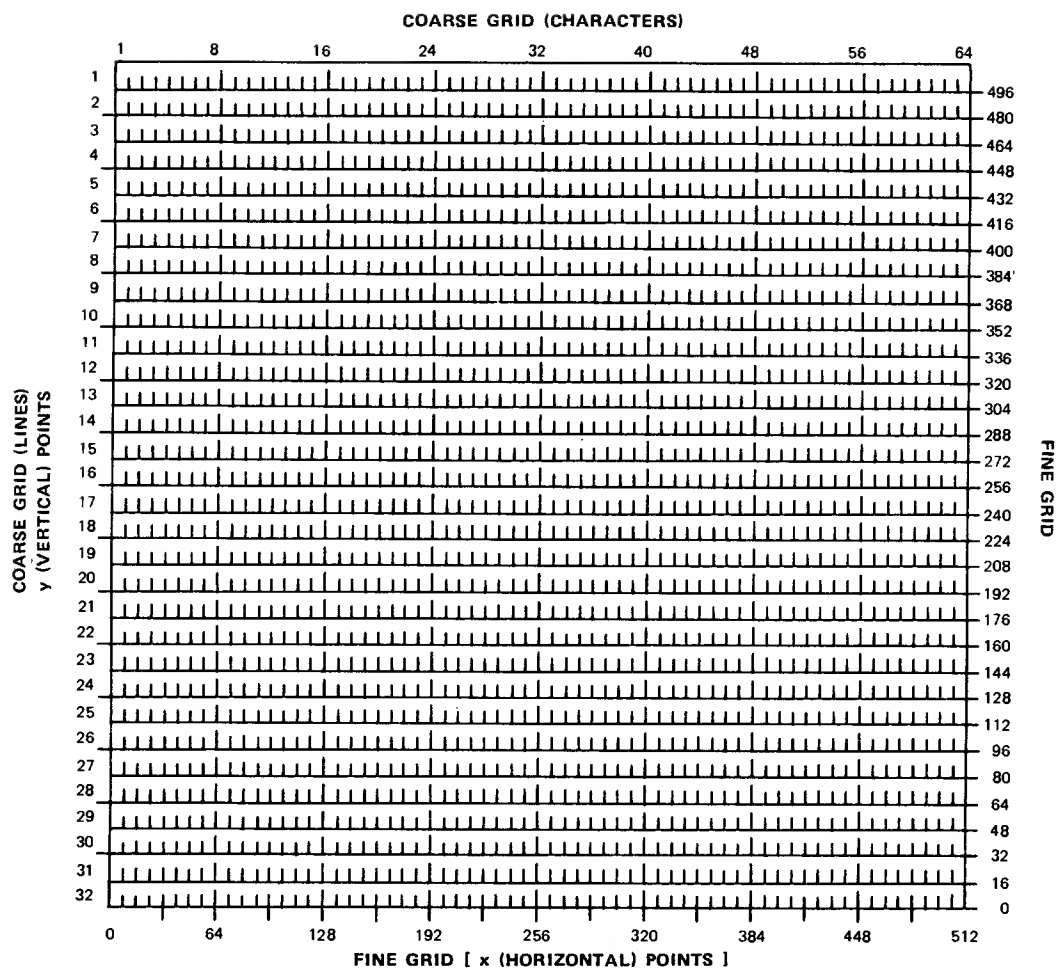
Figure 4-32. Coarse and Fine Grids†

_____

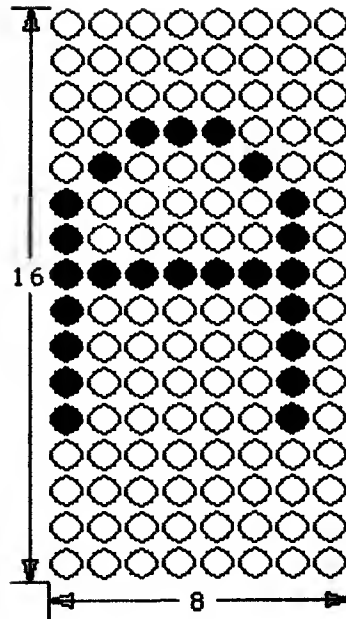†All references are to the lower left corner of areas.

Figure 4-33. Example of How Letters Occupy Spaces

Fine grid divides the screen into a 512-by-512-dot matrix (figure 4-32). When using the fine grid coordinates, you should think of the screen as the first quadrant formed by x and y axes. The bottom of the screen is the x coordinate. The left side of the screen is the y coordinate. The lower left corner of the screen is 0,0. Each position on the fine grid is identified by a pair of numbers separated by a comma. The first number is the x coordinate and indicates the number of dots from the left edge of the screen. The second number is the y coordinate and indicates the number of dots from the bottom of the screen. For example, position 240,125 represents the dot that is 240 dots from the left of the screen and 125 dots from the bottom of the screen. The fine grid screen can also be thought of as a graph with an x axis (horizontal) and a y axis (vertical). Some PLATO Author Language commands use the x and y axes to locate screen positions.

The following sample code allows you to create a display using some of the PLATO Author Language display commands.

To use this code, go to your TUTOR lesson file and create a normal TUTOR block. (Refer to Creating a TUTOR Block earlier in this section for information on how to create a TUTOR block.) Type i and press NEXT for insert mode and type the following code. Press SHIFT-STOP when finished to condense your lesson and see the display.

```
unit     display

at       232,280

write    hello

draw     232,280;272,280

box      1329;1536;2
```

Inserting and Showing Displays (ID/SD)

You can create a graphics or text display and see the display as it is being created using the insert a display (ID) and show a display (SD) editing directives.

The insert a display directive allows you to write text; draw lines, circles, or broken circles; and insert other display commands without coding the display instructions in your lesson. This editing directive automatically converts the display you create into PLATO Author Language code and inserts the code into your block. To use the insert a display directive while editing your TUTOR block, type id (you do not need to capitalize it) and the number of the line preceding the line where you want the code inserted, and press NEXT. Press HELP for more information on how to insert a display.

The show a display directive executes a specified number of display commands and then returns you to the Insert Mode display where you can add to or change the display if you choose. To use the show a display directive while editing your TUTOR block, type sd (you do not need to capitalize it) and a number indicating the number of lines from the first line of code you want displayed, and press NEXT. Press HELP for more information on how to show a display.

Creating Characters and Line Drawings

As an author, you can create characters and line drawings and use them in your PLATO lessons. Characters and line drawings are PLATO system features which are used to more effectively meet lesson objectives and to create special effects.

Character sets (charsets) are usually used to create small pictures which are displayed rapidly on the screen. Characters can be animated to move on the screen and create a special effect. You can either create your own character, or copy one from a library of characters on the PLATO system. (An example of an animated character is a bumblebee flying across the screen.)

Line drawings (linesets) are usually used for large drawings or to get the student's attention to follow the line being drawn. Some of the lineset features enable you to change the size of a drawing to be larger or smaller than the original size, copy a character set into a lineset, and set end points for where the next drawing should begin. Linesets also allow you to create perfectly symmetrical drawings using a graph with x and y axes. [An example of a linechar (lineset character) is a drawing which illustrates how to do calligraphy.]

Charsets and linesets each use a special editor to create displays. The following describes how to create characters and lineset characters.

Creating Programmable Characters

A programmable character is composed of one or more character spaces. A character space is a rectangle of dots, 8 dots wide and 16 dots high. Programmed characters are created by specifying which dots in the character space are displayed. For example, each letter of the alphabet is contained in one character space. Different letters are created by displaying different dots within the character space (figure 4-33). All characters are created by specifying which dots to display in one or more character spaces.

Characters are created and stored in special blocks called charset blocks. Charset blocks are one of the block types in the TUTOR file. The following steps describe how to create a charset block.

1. From the Author Mode display, type the name of your TUTOR file and press NEXT.

2. From the Block Listing display, type the capital letter of the block which precedes the block you want to create.

3. From the Block Creation Options display, select the option to create a charset block.

4. Type a name for the block and press NEXT. The system displays the Charset Options display (figure 4-34).

```
                          Charset one


        Type the appropriate number >

              1   Memory slots used

              2   Slots available

              3   Single character add/inspect/modify/delete

              4   Multiple character add/inspect/modify

              5   Make another copy of a character

              6   Copy from another charset

              7   Copy from char commands

              8   Convert to char commands



        Press:
                  LAB          to try characters
                  BACK         when done (save changes)
            SHIFT-HELP    to exit (ignore changes)
                  HELP         for additional information
```

Figure 4-34. Charset Options Display

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5. From the Charset Options display, choose the option corresponding to the type of character you want to create. Press HELP for an explanation of the options.

<div align="center">

NOTE

If this is the first time you are using charsets, select the Single Character/Add/Inspect/Modify/Delete option. This option is the easiest option to work with and understand and contains basic information on how to use the charset.

</div>

The system asks you to choose a key on the keyboard to directly correspond to each programmable character. For every character you create, there must be a key that directly corresponds to a key on the keyboard. This key is later used to insert the character in your lesson code.

6. Press the key which you want to correspond with the programmable character and press NEXT. The system displays the Character Design display.

    The Character Design display is the display where you create your character (figure 4-35). It contains an empty character space and several options for creating and editing the character. The lines to the left of the character space correspond to the dimensions of the PLATO capital and small letters. The + on one of the editing squares is the cursor. The cursor shows you the dot within the character in which you are working. To move the cursor, use the arrow keys. If you move the cursor off the character space, it reappears on the opposite side.

    The editing keys are the +, o, s, -, F, B, and i keys. They allow you to create and change your character. The +, o, s, and - keys are mode keys. They are the primary keys used to create your character. The F, B, and i keys are used to edit your character. The editing keys function as follows.

|	
+	Allows you to move across editing squares without changing what is in the squares (travel mode).
o and s	Put a dot in a specific editing square of your design area (store mode).
−	Removes dots from the design area (remove mode).
F	Fills in the entire character space with o's.
B	Empties the entire character space.
i	Illustrates the character; for example, shows you what the character will look like in its actual 8 by 16 dot size.
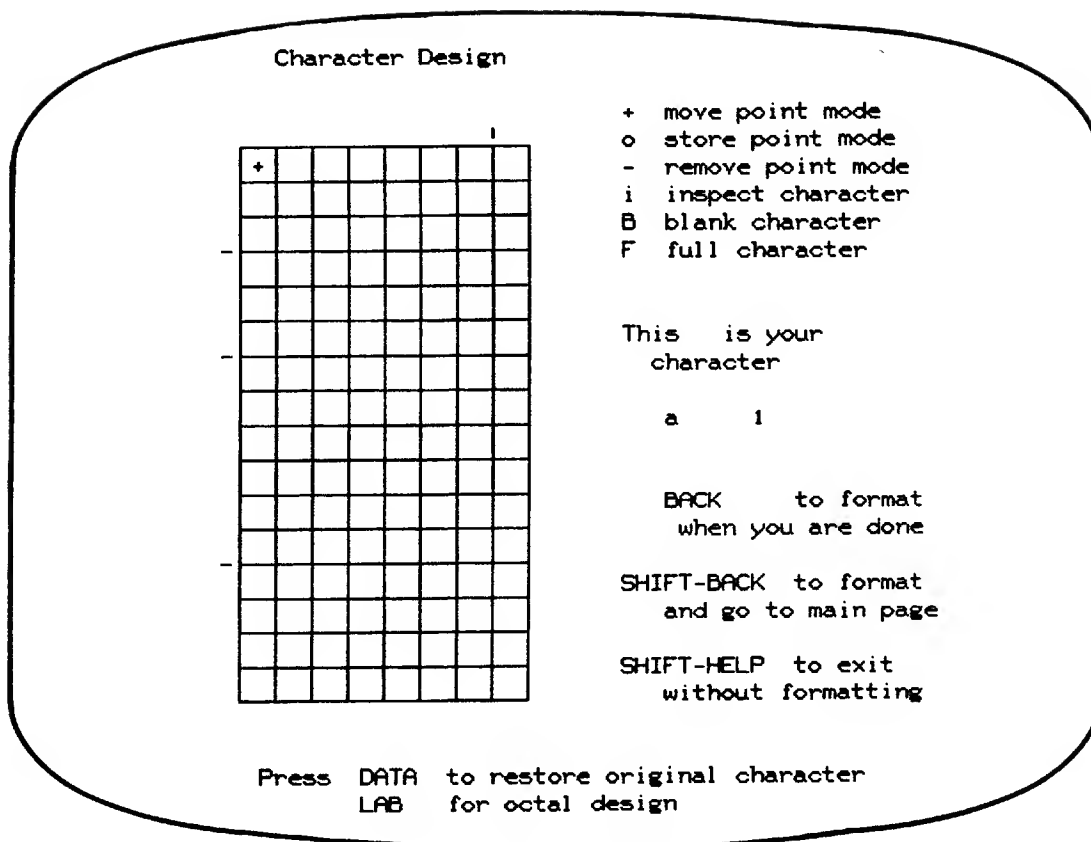
Figure 4-35. Character Design Display

Using Programmable Characters in Your Lessons

To use the characters you create in your lesson, insert the character into your lesson code using the –charset– and –write– commands. The –charset– command loads the characters into the terminal. This instruction should precede the first unit of your lesson in order for your lesson to run smoothly and without any long pauses while waiting for the characters to load. It can take up to 17 seconds to load a character set, depending upon its size. The –write– command inserts the character in the lesson. The following steps describe how to insert characters in your lesson code.

1. Go to the beginning of your lesson code and insert a –charset– command. Press TAB.

2. Type the name of the lesson which contains the charset block you want to use, type a comma, and type the name of the block containing the character. (Character sets do not need to reside within the files that use them.)

3. Insert a –write– command in your lesson code at the place in your lesson where you want the character to appear. Press TAB.

4. Press FONT and the letter of the key you chose to correspond to the programmable character you are inserting. (To resume typing normal characters after inserting a special character, press FONT again.)

Programmable characters are stored in the terminal; they are loaded into the terminal from the central system. This loading process can take up to 17 seconds, depending upon the size of the charset, and is always done before a lesson begins to avoid interruptions during instruction. Because it can take up to 17 seconds to load a character set, you should inform your students of the delay by writing a message in your lesson. This message should be placed before the -charset- command. If your characters are already loaded into the terminal when a student executes your lesson, the delay message becomes unnecessary. You can code your lesson to test to see if the characters are loaded and bypass the delay message and the character loading if they are. The -chartst- (character test) command allows you to do this. With the -chartst- command, you can also use the zreturn variable to branch your students directly into the lesson. The following code illustrates one way to use the -chartst- command and zreturn.

```
chartst   lesson,yours

branch    zreturn, 1done, x

at        1115

write     Setting up your lesson

charset   lesson,yours

erase

1done
```

With this code, if the -chartst- command causes zreturn to be set to -1 (if the characters have already been loaded), the student branches to 1done. The Setting Up Lesson message and the -charset- command are skipped because they are unnecessary. If zreturn is set to any other value, meaning that the loading has not been performed, the -at-, -write-, and -charset- commands are executed.

Additional Character Set Options

The following paragraphs describe some additional options available to users when creating programmable characters.

Keys Used and Keys Available

After you have created several characters in a charset block, you might have difficulty remembering which keys you used to correspond to various characters. To see a list of the keys you used and the characters that correspond to those keys, do the following steps.

1. From the Block Listing display, type the letter in front of one of your charset blocks.

2. Press NEXT to edit the charset. The system displays the Charset Options display.

3. Type the number in front of the Memory Slots Used option. If you created characters in the block, you see a list of the characters and their corresponding keys. If you did not create a character, you see a list of the keys which cannot be used to represent programmable characters.

You can also see a list of the keys to which you have not yet assigned special characters and which are available for use. The following steps describe how to see this list.

1. Type the letter preceding one of your charset blocks from the Block Listing display.

2. Press NEXT to edit the charset. The system displays the Charset Options display.

3. Type the number in front of the Slots Available option. The system displays a list of keys to which you can assign characters.

| NOTE |

A character set can contain up to 126 characters. However, not all of these characters can physically reside in one charset block. When a charset block is full, but there are characters still available in a character set, the PLATO system automatically creates an additional charset block to store the remaining characters. You will occasionally notice that one of your charset blocks has become two when you return to the Block Listing display.

Creating Multiple Characters

Sometimes you might want to create displays which are larger than those you can create using the Single Character Creation option on the Charset Options display. The Multiple Character option allows you to combine characters to create a large picture or display. The following steps describe how to create multiple characters.

1. Create and title a charset block from the Block Listing display. The system displays the Charset Options display.

2. Choose the Multiple Character/Add/Inspect/Modify option by typing the number in front of the option. The system displays a grid of large squares (figure 4-36). Each square represents a character. The arrow in the upper left corner is waiting for a character key to be assigned to correspond to that character.

3. Type in a key which is available to be used to represent a programmable character. The key appears in the first square at the left of the screen and the arrow appears in the second square from the left.

4. Type in a key to correspond to the character. The key appears in the first square at the left of the screen and the arrow appears in the third square from the left.

5. Type in a character key for the third square, and so on.

6. Press SUB to move the arrow down one square.

7. Press BACK to move the arrow back one square.

8. Type in character keys for the squares in the second, third, and fourth lines.

```
   Add/Inspect/Modify multiple characters

   Enter character  key  for each position

   ┌──────┬──────┬──────┬──────┬──────┬──────┐
   │      │      │      │      │      │      │
   │ ▷    │      │      │      │      │      │
   │      │      │      │      │      │      │
   │      │      │      │      │      │      │
   ├──────┼──────┼──────┼──────┼──────┼──────┤
   │      │      │      │      │      │      │
   │      │      │      │      │      │      │
   │      │      │      │      │      │      │
   ├──────┼──────┼──────┼──────┼──────┼──────┤
   │      │      │      │      │      │      │
   │      │      │      │      │      │      │
   │      │      │      │      │      │      │
   ├──────┼──────┼──────┼──────┼──────┼──────┤
   │      │      │      │      │      │      │
   │      │      │      │      │      │      │
   │      │      │      │      │      │      │
   └──────┴──────┴──────┴──────┴──────┴──────┘

Press NEXT to go forward, BACK to go backwards, SUP to go up
     SUB to go down, SHIFT-HELP for null character.
     SHIFT-NEXT to switch between number/character entry
          DATA when finished, SHIFT-BACK for index
```

Figure 4-36. Multiple Character Creation Display

9. Press DATA to begin creating your multiple character. The system displays a large grid with a cursor in the upper left corner of the screen. The cursor and the editing keys function the same as when creating single characters, except the s key, as well as the o key, stores the dots you turn on. If you have a touch panel option on your terminal, you can move the cursor with your finger if you are in travel mode.

10. Create a character using the character creation options listed in the right corner of the screen. The squares outlined in bold lines correspond to the squares to which you assigned keys on the previous grid.

11. Press SHIFT-BACK when finished creating your character. You can either create another character or press SHIFT-BACK again to return to the Charset Options display.

12. Insert the character into your code using the same procedure as for single characters; pressing FONT and typing the first three characters on the first line of the -write- statement and the second three characters directly below on the second line of the -write- statement. Be sure to press FONT to signal the end of programmable character presentation.

Copying Characters

If you do not want to design an original character to use in your lesson, you can copy a character from one of the character set catalogs on the PLATO system. You can reach these catalogs from the Author Mode display or from the What TUTOR Feature display in AIDS. The titles of the character catalogs are: pictures, people, and charsets. If you decide to use one or more characters from a character set catalog, be sure to copy the character into your own charset block. The catalogs are revised occasionally so you should copy the character to prevent it from being changed or deleted. The following steps describe how to copy a character.

1. Find the picture you want to copy from the Catalog of Characters in AIDS, and write down the information exactly as it appears at the top of your screen. The first part of this information is the lesson name and the last part is the charset name. This information is later used to copy your character.

2. Write down the keys that appear by your picture, exactly as they appear.

3. Press SHIFT-NEXT when finished to leave AIDS.

4. Access your TUTOR file and either create a charset block or access one previously created and press NEXT to edit it.

5. Choose the Copy from Another Charset option from the Charset Options display by typing the number in front of the option.

6. Type the lesson name of the charset you recorded from the Catalog of Characters. Press NEXT.

7. Type the charset name and press NEXT.

8. Press NEXT to copy this character. The system displays the Copy-a-Character display.

9. Type the first key of the character you want to copy. (These are the keys you recorded from the catalog.) The arrow moves to To Character.

10. Type a key available in your charset. Continue doing this until you assign all the keys you recorded from the catalog to available keys in your charset.

11. Press BACK when finished.

12. Insert the copied character into your lesson code following the same procedure(s) described earlier in this section.

You can design and draw line drawings and characters to use in your lesson with linesets. Linesets are similar to character sets as they are both graphic displays which can be original designs or copied from a catalog. Linesets, however, can be rotated on the screen and the size of the line character can be changed. While charset characters use a fixed amount of code space in a charset block, a line character uses only as much space in the block as it needs. For example, a totally filled one-block lineset could contain 128 small line characters or 30 large elaborate characters.

Linesets provide two types of grids on which to design your characters or drawings: normal grid and large grid. The normal grid (figure 4-37) is similar to the character set grid as it is 8 dots wide by 16 dots high. The solid lines to the left of the grid correspond to the dimensions of the capital and small letters of the alphabet within an 8-by-16-dot character space. The large grid (figure 4-38) is 120 dots wide by 120 dots high. It displays a small box to the right of the center which is 8 dots wide by 16 dots high. This box represents the normal grid or one character space.
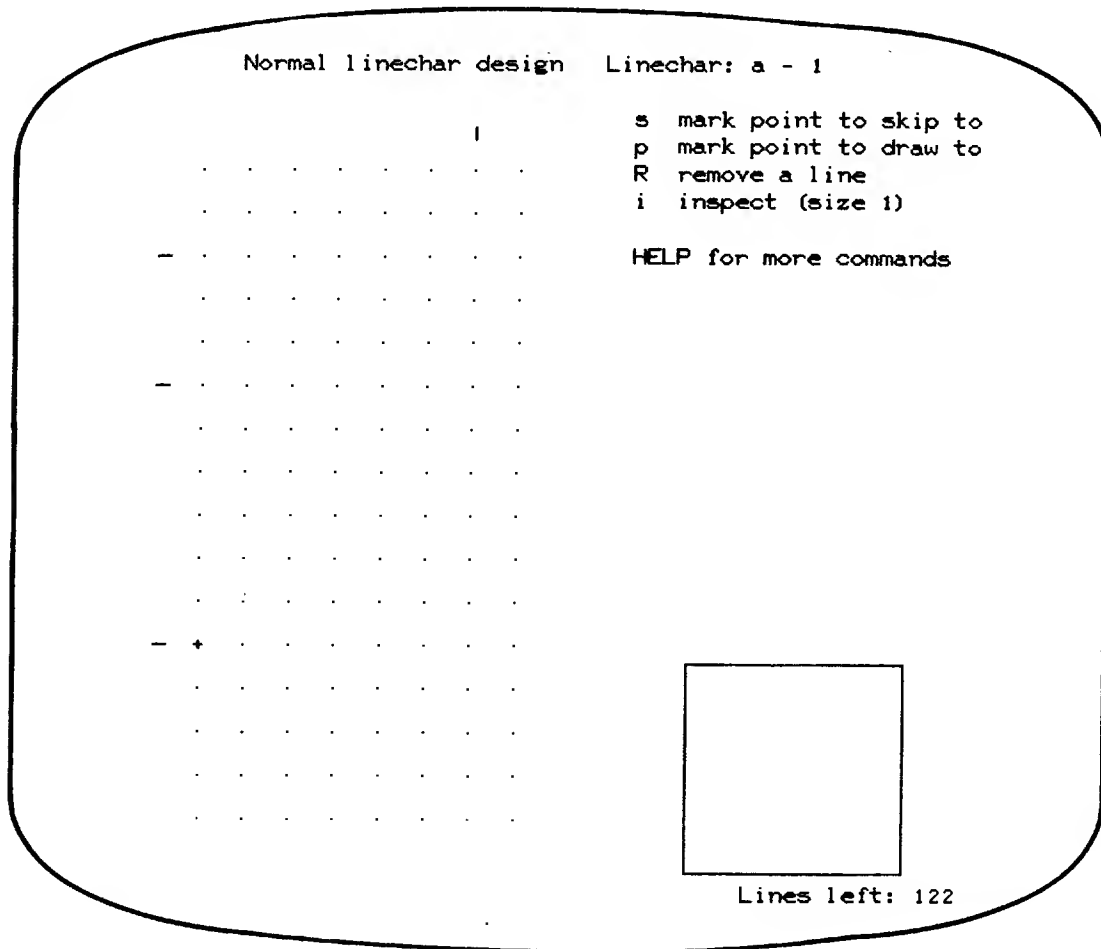
Figure 4-37. Lineset Normal Grid

```
    Large-grid linechar design    Linechar: a - 1

                                                 arrow keys-
   ┌──────────────────────────────────┐            move cursor
   │                 ┊                 │         s  skip to point
   │                 ┊                 │         p  draw to point
   │  .   .   .   .  ┊  .   .   .   .  │         R  remove line
   │                 ┊                 │         i  inspect
   │                 ┊                 │
   │  .   .   .   .  ┊  .   .   .   .  │         HELP for more
   │                 ┊                 │
   │                 ┊                 │
   │  .   .   .   . ┌┊┐ .   .   .   .  │
   │               ┊│ │                │
   │................│.│................│
   │  .   .   .   . └┊┘ .   .   .   .  │
   │                 ┊                 │
   │                 ┊                 │
   │  .   .   .   .  ┊  .   .   .   .  │
   │                 ┊                 │
   │                 ┊                 │
   │  .   .   .   .  ┊  .   .   .   .  │
   │                 ┊                 │
   │                 ┊                 │
   │  .   .   .   .  ┊  .   .   .   .  │
   └──────────────────────────────────┘

                    x=  0  y=  0    Lines left: 122
```
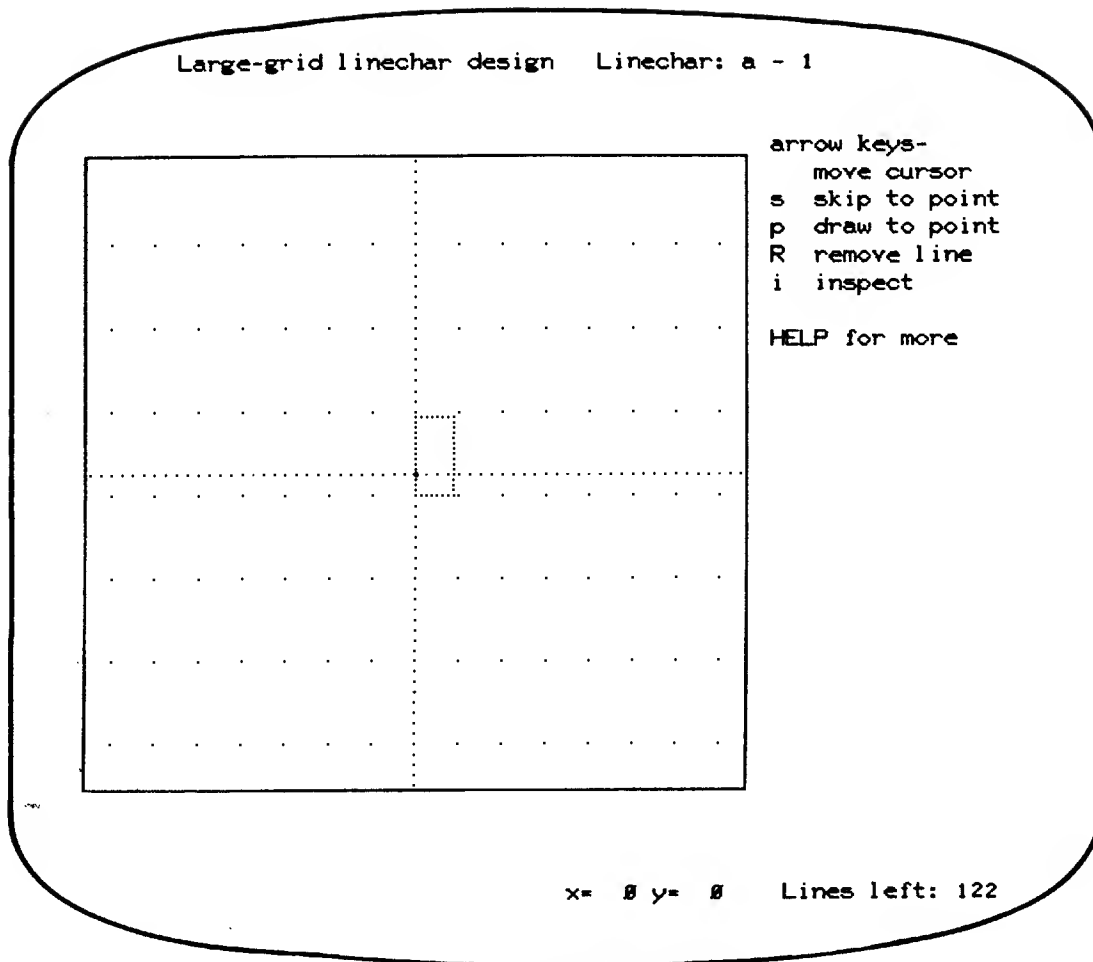
Figure 4-38. Lineset Large Grid

Line characters and drawings are created and stored in special blocks called lineset blocks. Lineset blocks are one of the block options in your TUTOR file. The following steps describe how to create a lineset block.

1. Type the name of your TUTOR file from the Author Mode display and press NEXT.

2. Type the capital letter of the block preceding the block you want to create from the Block Listing display.

3. Select the option to create a lineset block from the Block Creation Options display. The system asks you to name the lineset block.

4. Type a name for the block and press NEXT. The system displays the Lineset Options display (figure 4-39).

5. Type the letter in front of the Normal Linechar option if you want to create a lineset using the normal grid or type the letter in front of the Large Linechar option if you want to use the large grid. The system displays the grid you select.

```
                    Lesson english    Lineset two



                a   Slots used

                b   Slots available

                c   Normal linechar design

                d   Large Grid linechar design

                e   Delete a linechar

                f   Make a copy of a linechar




        Press  NEXT      for additional options
               LAB       to try out your linechars
         SHIFT HELP   to abort changes made
               HELP      available
```

Figure 4-39. Lineset Options Display

Create your character on either grid using the editing keys. The system displays a list of available editing
keys in the upper right corner of the screen. Press HELP for an explanation of the keys and NEXT for
more editing options. The large grid contains some additional editing options not available on the normal
grid. Table 4-1 describes the functions of the editing keys available for the normal and large grids.

TABLE 4-1. FUNCTIONS OF EDITING KEYS FOR NORMAL AND LARGE GRIDS

Key	Function	
	Normal Grid	Large Grid
Arrow keys	Move the cursor in the direction of the arrow (SHIFTed keys move farther).	Move the cursor in the direction of the arrow (SHIFTed keys move farther).
s	Skips to a point without drawing a line. Marks a point to skip to.	Skips to a point without drawing a line. Marks a point to skip to.
p	Marks a point to draw a line to current position of cursor.	Marks a point to draw a line to current position of cursor.
R	Removes a line from the last point of the line.	Removes a line from the second point of the line.
i	Displays the linechar in size 1.	Displays the linechar in size 1.
I	Displays and rotates the linechar in any size or position.	No function.
S	Changes the size of the stored linechar.	Changes the size of the stored linechar.
u	No function.	Displays the coordinates at the bottom of the screen.
k	Displays a corresponding character from a charset.	Displays a corresponding character from a charset.
l	No function.	Displays other characters from this lineset.
m	No function.	Repositions entire linechar by a specified number of dots.
g	No function.	Removes and replaces guidelines on the grid.
K	No function.	Displays one quadrant (1/4) of the large grid to edit.
EDIT	Moves cursor to the next point in the linechar to edit the linechar line by line.	Moves cursor to the next point in the linechar to edit the linechar line by line.
SHIFT-EDIT	Moves cursor to the last (end) point in the linechar.	Moves cursor to the last (end) point in the linechar.
LAB	Sets an ending position where next linechar will start plotting.	Sets an ending position where next linechars will start plotting.
SHIFT-HELP	Clears the screen and allows you to begin again.	Clears the screen and allows you to begin again.

TABLE 4-1. FUNCTIONS OF EDITING KEYS FOR NORMAL AND LARGE GRIDS (Contd)

Key	Function	
	Normal Grid	Large Grid
SHIFT-NEXT	Shows a point-by-point listing of the linechar.	No function.
DATA	Replots the linechar on the screen.	Replots the linechar on the screen.
SHIFT-DATA	Restores linechar to its original form (removes all changes you made since entering the lineset block).	Restores linechar to its orignal form.
SHIFT-LAB	Switches to large grid mode.	Switches to normal grid mode.

Additional Lineset Options

The Lineset Options display (figure 4-39) lists several options for you to choose from when creating or editing linesets. To select a particular option, type the letter in front of that option. Press NEXT for a list of additional options. Press HELP for more information on the options and how to use them. Some of the options available on the Lineset Options display and the Additional Lineset Options display are:

Slots Used and Slots Available	Allow you to see a list of the keys which have lineset characters (linechars) assigned to them and a list of keys which are available to be assigned to lineset characters.
Delete a Linechar	Allows you to delete a linechar by typing the key assigned to the linechar.
Make a Copy	Allows you to copy a linechar and assign a character key to it.
Copy from Another Lineset	Allows you to copy either a single linechar or an entire lineset from another lineset block.

Lineset Library

The PLATO system contains a collection of linesets for you to copy and use in your lessons. These linesets are located in the on-line lineset library in AIDS. To see the lineset library, press SHIFT-A from the Author Mode display to access AIDS. Press DATA, type library, and press NEXT. Choose the Lineset Library option by typing the letter in front of the option.

To copy a lineset from the library to use in your lesson, create a lineset block in your TUTOR lesson file and use the Copy from Another Lineset option. This option allows you to use characters as they are or modify them.

Using Lineset Characters in Your Lesson

Linesets, like charactersets, require a special command in your lesson, (the -lineset- command) to be used. Tags of the -lineset- command are the lesson name and block name of the lineset to be used.

Unlike charactersets, linesets are not loaded into a user's terminal; they are simply placed in ECS or ESM along with a lesson's condensed, binary code. Your lineset is included in your ECS or ESM lesson charge. Because linesets are not loaded into your terminal, use of a lineset does not cause any loading delay before your lesson begins execution.

Like the -charset- command, the -lineset- command is usually placed in the initial entry unit (the first code executed before the first -unit- command) of a lesson. This is not necessary; it is a convention which makes such commands easier to find and simplifies lesson maintenance across multiple authors. Also, like programmable characters, lineset characters are indicated using a -write- command. Tags of the -write- command which are to be linechars are preceded with a FONT keypress.

AIDS Listing of Display Commands

If you do not understand the function of a display command or how to use it, you can refer to the AIDS listing of display commands. The AIDS listing of display commands contains a list of all the display commands, categorized by type. From this listing, you can see an explanation of a display command and how to use it.

The following steps describe how to access the AIDS listing of display commands.

1. Press the SHIFT key and type A from the Author Mode display. The system displays the AIDS Title display.

2. Press NEXT. The system displays the AIDS Index.

3. Choose the Functional Lists of TUTOR Commands option by typing the letter in front of the option. The system displays an index of the major types of PLATO Author Language commands.

4. Choose the Display Commands option by typing the letter in front of the option. The system displays a list of all the display commands, categorized by type.

5. Press DATA, type the name of the command, and press NEXT to see information on a specific command.

For more information on display commands, refer to the PLATO Author Language Reference Manual. For information on other types of commands, refer to Referencing PLATO Author Language Commands later in this section.

SUGGESTED GUIDELINES FOR WRITING PLATO LESSONS

As an author writing PLATO lessons for students, you should make sure your lessons are clear, concise, and nonconfusing. The following guidelines should be followed when writing your lessons to help meet these lesson requirements.

- List all function keys and their uses. All keys should function as documented and should not change functions unexpectedly.

- Include a title page which contains the senior author's name and a descriptive title of the lesson's contents. Do not put information which is subject to change on the title page.

- Inform the user of any special resources (such as slides, audiovisuals) that are required for the lesson immediately following the title display.

- Avoid displaying information below an arrow if you want the user to enter information at that arrow. Information should only be displayed below an arrow after the user enters information at the arrow (users tend to stop reading at the arrow).

- Avoid excessive use of slow line-drawn graphics and sized writing. These features are generally used for special effects or specific examples and should not be overused in one lesson. If you do include very slow graphics, allow the user to stop the graphic using a function key.

- Use the -long 1- instruction (after the -arrow- command) when you want the user to select an option from an index of options. This allows the user to branch to a new display with a single keypress and avoids excessive use of the NEXT key.

- Leave the bottom two lines of the screen blank when writing lessons in which students are likely to use TERM features. (TERM features use these lines and cause information displayed there to be erased.)

- Ensure the lesson does not contain any condense errors.

- Design displays to proceed from top to bottom and left to right for Western cultures.

UNDERSTANDING ECS/ESM USAGE AND CHARGES

Each time a lesson is used (executed), a copy of the original PLATO Author Language code is condensed into a binary code and put into extended core storage (ECS) or extended semiconductor memory (ESM). ECS and ESM are types of memory used by the PLATO system. The amount of ECS/ESM space the lesson requires depends upon the number of computer words the lesson binary code contains. (A computer word is a basic measurement used to determine how much computer memory or space the lesson uses. A computer word consists of 10 characters. A character can be any typed letter, number, or symbol. Spaces between characters count as a character but blank spaces at the end of a line do not. Capital letters count as two characters.)

ECS/ESM is allocated according to sites. A site is a group of PLATO terminals which share a pool or specified amount of ECS/ESM space. The amount of ECS/ESM available at each site is determined by two factors: the base allotment and the current allotment. The base allotment is the amount of ECS/ESM which is always available, regardless of user load. The current allotment is the total amount of ECS/ESM

which is available to all users at a specific site based on the amount of ECS/ESM which is not being used by anyone on the system. This figure fluctuates according to the demand for ECS/ESM from other sites. The current allotment adds extra ECS/ESM not being used at other sites to the base allotments. To see what site you are on and information about your site's ECS/ESM allotments, press SHIFT and type E from the Author Mode display (for authors) or choose the Interactive Communications option from the PLATO Facilities display (for instructors) and select the See Information About this Site option.

There are three types of ECS/ESM usage a lesson can use:

- Lesson

- Common

- Storage

The lesson usage reflects the amount of ECS/ESM used by the binary code of the lesson. This is charged once to your site, no matter how many students use the lesson. The common usage is for the computer memory which all users of the lesson share. The storage usage is for memory that an individual uses for himself/herself only and does not share with others. The storage usage for your site always increases when more than one person uses the same lesson at one time (if the lesson requires storage for each user).

Each time you execute a lesson and return to the Author Mode display, the system displays a tally of your ECS/ESM usage (figure 4-40). These figures indicate exactly how much ECS/ESM your lesson(s) uses and can be helpful in keeping track of your ECS/ESM usage while you are creating lessons. Lessons which are 1500 words long or less automatically use 1500 words of ECS/ESM, regardless of their size. Lessons which are more than 1500 words long use the same amount of ESC/ESM as the number of computer words they contain.

```
                    AUTHOR MODE


              Choose a lesson:



          >




              HELP available


   This lesson used  14.8 TIPS and  31.1 DAPM

   Total words of ECS used =  3282
                             1469 (lesson)
                              131 (common)
                             1682 (storage)
```
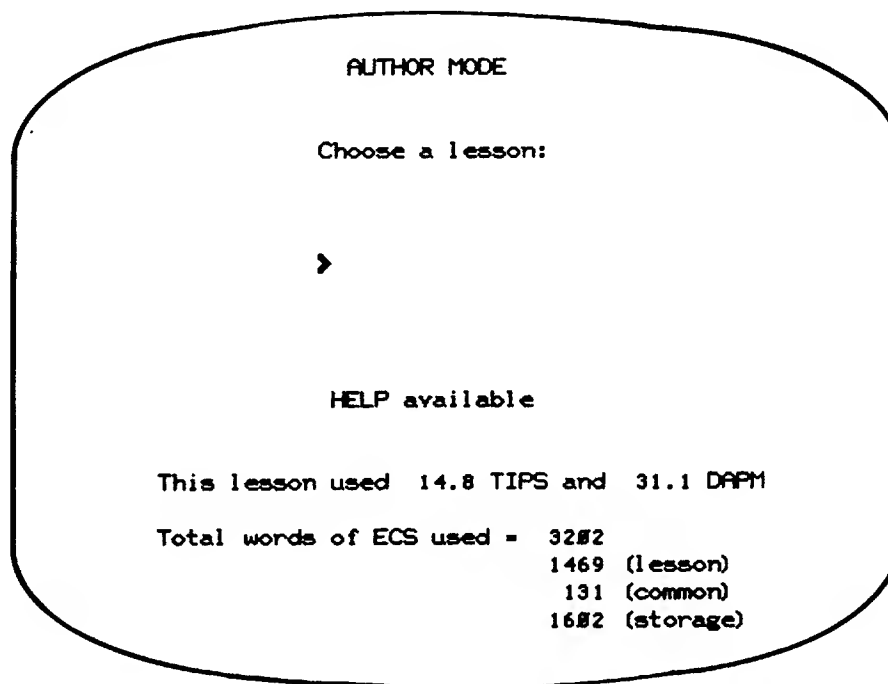
Figure 4-40. Author Mode Display with ECS Tally

When the demand for ECS/ESM exceeds the current allotment for a site, the system cuts back ECS/ESM usage by restricting users from signing on and by deleting users from lessons. Authors using lessons which require large amounts of ECS/ESM are automatically dropped from their lessons and returned to the Author Mode display. Students are never deleted nor are authors using lessons of 1500 words or less.

It is important to try to limit your ECS/ESM usage, both as a system courtesy to other users and as a means of saving on ECS/ESM usage. The following list suggests some ways to save on ECS/ESM usage.

- Avoid excessive use of storage.

- Keep your lessons as small as possible, without compromising the quality of the lesson.

- Schedule your usage so all people using the same lesson will be signed on at the same time. You are only charged once for the lesson binary, no matter how many people use the lesson at one time.

For more information on ECS/ESM usage, refer to AIDS or contact an on-line PLATO consultant.

REFERENCING PLATO AUTHOR LANGUAGE COMMANDS

As an author, there may be times when you need help understanding the function of a command, or choosing a command to make your lesson work a certain way. Two references you can use to receive help with the PLATO Author Language are the PLATO Author Language Reference Manual and the AIDS on-line reference manual.

AIDS contains a list of all the PLATO Author Language commands and explains their functions. Since there are many commands, AIDS contains an index which allows you to easily look up information on any command. The commands are indexed several ways to enable you to find an appropriate command even if you do not know the name of the command you need.

The following steps describe how to access the AIDS Index of PLATO Author Language commands.

1. Press the SHIFT key and type A from the Author Mode display. The system displays the AIDS Title display.

2. Press NEXT. The system displays the AIDS Index display.

3. Choose the Functional Lists of TUTOR Commands option by typing the letter in front of that option. The system displays an index of major types of PLATO Author Language commands.

4. Choose the type of command you want to see information on by typing the letter in front of that option. The system displays a list of commands and several options to choose from.

5. Do one of the following steps.

- Press LAB to see more information on the command category.

- Press DATA, type the name of the command, and press NEXT to see information on a specific command. Many commands are a part of both the PLATO Author Language and the Micro PLATO Language. Commands which can be used in both languages are clearly indicated whenever specific information on a command is provided.

$$\boxed{\textsf{NOTE}}$$

If you know the name of the command on which you want information, you can access the information from the Author Mode display by typing SHIFT-A, pressing DATA, typing the name of the command, and pressing NEXT. For a list of commands in the Micro PLATO Language, type Micro PLATO Language at the What Feature arrow. You can also use the quick reference (Q-ref) feature described earlier in this section while editing a lesson.

USING OTHER BLOCK TYPES

The PLATO system provides several types of blocks for authors to use while writing lessons. Each type of block is designed to be used in conjunction with the TUTOR lesson file and each performs specific functions.

All of the block types available for authors to use are listed on the Block Creation Options display of the TUTOR file (figure 4-29). To create a specific block, type the number in front of the type of block you want to create and follow the instructions provided by the PLATO system.

The following paragraphs describe the functions of the different types of blocks.

Common Block

A common block permanently stores variables used in your lesson. Permanent common variables are frequently used to hold cumulative data. Some examples of the kinds of data common variables can store are: the number of students that completed a lesson, the number of students that passed and failed a question on a quiz, and the average student completion time for a lesson. Permanent common variables are stored on disk when the lesson is not in use. All users of the lesson share the same common variables.

To use common variables in your lesson to collect data, you need to create a common block to store the collected data. The following steps describe how to create a common block.

1. Type the shifted letter of the block preceding the block you want to create from the Block Listing display of your TUTOR lesson file. The system displays the Block Creation Options display.

2. Choose the Common Block option by typing the letter in front of the option. The system asks you to name the block.

3. Type a name for the block and press NEXT. The system asks you how many words of common you want.

4. Type the number of common words you want. (If ECS or ESM is a prime consideration, specify the number you want in multiples of 64 since ECS charges are in increments of 64 (for example, a 60-word common uses 64 words of ECS/ESM; a 65-word common uses 128 words of ECS/ESM).

After you create a common block, you can see and edit stored common data in the common block. To see and edit stored data, type the letter of your common block from the Block Listing display and press NEXT.

The common block requires you to use a special editor to edit the block contents. Press HELP from the displayed common data in the block for information on how to use the common editor.

$\boxed{\textbf{NOTE}}$

It is easy to accidentally destroy or change the values of variables in a common block if you are unfamiliar with using the common editor. It is a good idea to create a sample block and practice using the common editor before using permanent common to store valid data in your lesson.

Refer to the PLATO Author Language Reference Manual and AIDS for more detailed information on how to use the common editor and for a list and description of all -common- commands (necessary to manipulate data in a common during lesson execution).

Micro Block

Micro characters are a series of characters that can be accessed with the MICRO key and are stored in a micro block. An example of characters stored in a micro table is frequently used commands, phrases, or numbers which authors use in their lessons or in coding their lessons. A micro character can store up to 40 ordinary characters and display them on the screen with just two keypresses (MICRO and the key chosen to represent the character string). Micro tables are most frequently used by experienced authors who have a repertoire of coding conventions and routines established to save time entering them.

Refer to the AIDS What TUTOR Feature display and type micros for more information on micro blocks.

Leslist Block

A leslist block stores a list of lesson file names which are frequently referenced in the same or in other lessons. The leslist block allows you to reference the leslist lessons in your lesson code by the numbered position of the file in the leslist rather than file name. Leslists decrease the amount of editing time required to code lessons by allowing you to reference lessons by number rather than name. They also eliminate the need to edit every file that refers to a specific lesson if that particular lesson's file name is changed. If the file name of a lesson which is included in the leslist changes, the change only needs to be noted in the leslist since the lesson is referenced by number in the code. (This can be very time saving for lessons that are frequently cross-referenced.)

Vocabulary Block

A vocabulary block is designed to be used with the -vocab- or -vocabs- commands. It is usually used when an author anticipates complex answer judging in a lesson. The vocabulary block stores a list of synonymous words or phrases or a list of words or phrases the system should ignore when judging a student's response to a question. These words or phrases stored are those normally included in the tag of an answer judging command. Using a vocabulary block to store these responses facilitates editing as the author can reference the vocabulary block, rather than repeatedly typing all the possible responses in command tags.

Listing Block

A listing block is mainly used as an author's aid in conjunction with the search editing option (SHIFT-X). The listing block stores the information collected from the search and displays it in a list. The listing block can be inspected but not edited by an author.

Text Block

A text block stores information which is not part of the TUTOR lesson. The text block is structured similarly to the TUTOR block in that both block types can be copied and deleted and the TUTOR editor is used to insert and edit information. The information contained in the text block, however, is not condensed with the code contained in the TUTOR blocks. Some examples of the kinds of information stored in text blocks are: lesson documentation, code to be saved, or letters or articles to be printed at a later date.

Copy-a-Block

The copy-a-block option allows you to copy the contents of one block and transfer it to another block in any lesson to which you have editing access. The following steps describe how to use the copy-a-block option.

1. Press LAB from the Block Creation Options display of the lesson in which you want to insert the copied material.

2. Type the name of the lesson which contains the block(s) you want to copy. The system displays a listing of all the blocks in that lesson. (To see more parts of the lesson, press SHIFT +.) Press NEXT.

3. Type the security code (change code) of the file from which you are copying blocks.

4. Type the number in front of the block(s) you want to copy and press NEXT. (To copy all the blocks, type all and press NEXT.) The system copies the blocks and includes them in your current lesson.

USING ADVANCED EDITING DIRECTIVES

In addition to the basic editing directives authors use to insert and edit information in files, there are several advanced editing directives which further facilitate the editing process.

The PLATO system provides a complete description of these advanced editing directives. To see this information, press HELP while editing a lesson. The system displays the Editing HELP display which contains several options. The Line Display Options entry contains information on advanced editing directives.

Some of the most frequently used advanced editing directives and their descriptions are:

a	Appends specified number of lines to lines already saved.
au	Appends lines starting at top line and continuing up to specified –unit– command.
du	Deletes lines from top up to specified –unit– command.
e	Divides one block into two blocks at a specified line number.
G	Moves contents of following block into current block (if enough space is available) and destroys the following block.
h	Displays hidden characters such as FONT or MICRO which, although present, are not visible in the line specified.
j	Saves location of specified line number to be returned to later.
J	Returns to last location saved by j option.
su	Saves lines starting at the top line and continuing to the indicated –unit– command.

t	Specifies tabsets other than normal system preset tabs.
l	Specifies the number of lines to be displayed initially.
m	Modifies a character string.
M	Modifies subsequent character strings.
n	Replots the current display on the screen.
out	Deletes all edits made in the block since you entered it.
q NEXT	Allows you to see a quick AIDS reference display at the bottom of the screen on PLATO Author Language commands.
q SHIFT-NEXT	Allows you to go directly to an AIDS description of a PLATO Author Language command or system feature. Press SHIFT-NEXT while in AIDS to return to the editor.
sl	Reduces indenting level of specified lines (shift left).
sr	Increases indenting level of specified lines (shift right).
tt	Returns author set tabs back to system set tabs.
U	Brings previous unit to top of screen.
u	Brings next unit to top of screen.
W	Prevents wraparound in the editor.
w	Adjusts text in lesson to a specified width for specified number of lines.
x NEXT	Searches and brings specified character string to top of screen.
x SHIFT-NEXT	Causes a search through entire lesson for specified character string.
V	Displays modification (mod) words if they are not being displayed and removes them from the display if they are being displayed.
SHIFT-NEXT	Advances to next block in lesson.
SHIFT-BACK	Displays preceding block.
LAB	Allows you to change the name of the block.
SHIFT-DATA	Displays an index which allows you to convert a normal block to another type of block. Also allows removal of mod words from block.

USING BLOCK LISTING DISPLAY OPTIONS

There are several options available to authors on the Block Listing display. Many of these options are hidden options; that is, options which are not listed as available on the screen display. To see a list and description of these options, press HELP from the Block Listing display, and choose the Block Directory Options entry.

DOCUMENTING LESSON CHANGES

The PLATO editor has an optional feature which automatically documents changes made to a lesson. The mod words feature keeps a record of when and by whom lesson changes are made and keeps a copy of the changed lines of code.

The mod words feature is frequently used when several people are editing the same lesson, or when the primary author wants to try some new code within an existing lesson without deleting the original code.

To use the mod words feature, the mod words option must be set to on (YES) on the Editing Specifications display accessed from the Block Directory display of your lesson. The following steps describe how to access the mod words option.

1. Press DATA from the Block Listing display of your lesson. The system displays the Block Directory display.

2. Select the Editing Specifications option by typing the letter in front of it.

3. Select the Mod Words option by typing the letter in front of the option(s) you want to use. Typing the letter(s) again turns the option(s) off (NO).

For more information on mod words and how to use them, press HELP while editing your lesson or from the Editing Specifications display. You can also refer to AIDS for more information on mod words.

WRITING ROUTERS

Some curricula or lessons have special requirements which cannot be met with the PLATO system router "mrouter" or other instructional delivery methods. As an author, you can write a router using the PLATO Author Language to meet the specific needs of a curriculum.

An author-written router is similar to a TUTOR file as it can be programmed to do anything a TUTOR lesson can. Its major function usually is to route students to lessons; however, it can also be programmed to record information, analyze and summarize data, present and regulate lesson sequencing and prerequisites, use the touch panel, and limit access to lessons, among other functions.

To write a router, you need to know the PLATO Author Language. Experienced authors usually can write routers. To learn how to write a router, refer to the AIDS What TUTOR Feature display and type writing your router. You can also use the TERM-consult feature to receive on-line help from PLATO consultants when writing your router.

PREPARING LESSONS FOR PUBLICATION

As an author, you can publish the PLATO lessons you write and make them available to large numbers of users. Published lessons are copyrighted, are included in the Catalog of Available Courseware, and are available for use on all Control Data PLATO Services Systems, both domestic and international. Published libraries may or may not be available on PLATO systems not owned and operated by Control Data. Published lessons are required to conform to the technical and mechanical standards set by Control Data for published courseware and are reviewed by Control Data personnel prior to publication. The review process checks for coding errors; punctuation, grammar and spelling errors; unauthorized use of files; and interference with the operation of other PLATO lessons.

You can expedite the review process by checking your lesson for errors before submitting it for publication. The PLATO lesson "filescan" checks your lesson for coding errors and for references to other TUTOR files, and lists this information for you to examine. From this list, you can determine if there are any coding conventions used which might make the lesson unpublishable. Lesson "filescan" can also display the text of your lesson to allow you to check for mechanical (spelling, punctuation) errors. The following steps describe how to use "filescan" to check your lesson for technical and mechanical errors.

1. Type filescan on the Author Mode display and press DATA. The system displays three options.

2. Type the number in front of the File Scan option. The system displays three options.

3. Choose one or more of the following options by typing the number in front of the option(s) you want and press SHIFT-NEXT.

    ● Publishing Errors and Warnings – to see a list of possible coding problems in your lesson.

    ● External References – to see a list of the TUTOR files your lesson references.

    ● Text – to see a copy of the text of your lesson to check for mechanical errors.

4. Do one of the following steps depending upon where you want the information displayed.

    ● Press LAB to display the information on the screen.

    ● Press DATA to transfer the information to a dataset file. (From the dataset, you can obtain a printed copy of the information.) Type the name of the dataset file in which to store the information. Press NEXT.

Lesson "filescan" can also be used to change external references within a file or set of files. If, for example, you are submitting a set of 15 interrelated lessons for publication and want to keep manuscript copies of the files, you must first make a complete set of copies of the files. Using the "filescan" conversion option, you can then change all the references to the original file names within the code of the newly named files to reference the manuscript file names.

Lesson "filescan" uses a rename leslist option to change external references. The rename leslist option is structured to contain the old file names in the even numbered slots (starting at slot 0) and the new file names in the odd numbered slots (starting at slot 1). All file references are then changed from the old file name (even entries) to the new file names (odd entries).

To use the rename leslist option to change external file references, choose the File Conversion option from lesson "filescan".

Press HELP from the main index for more information on "filescan".

USING DATA COLLECTION FILES

As an author, you can collect and store large amounts of information in files on the PLATO system. There are three types of data collection files which are designed to do this: dataset files, nameset files, and code files. Dataset and nameset files are often used to store information related to PLATO lessons, similar to the information contained in TUTOR lesson variables. They are similar in function, but different in structure. Code files are used to store code other than the PLATO Author Language code.

The following paragraphs describe these data collection files.

DATASET FILES

A dataset is a special file which stores information. It is often used as an auxiliary file for large amounts of data collection from a lesson. Some examples of the kinds of information you can store in a datafile are: cumulative statistics, pools of questions and answers to be used in a test, responses made to test items, scores of the top 10 or 20 winners of a game, and so on. A dataset is composed of records (the parallel to the block in the TUTOR file). Each record can store a specific number of words. Record sizes can range from 64 to 512 words. The system default record size is 320 words, but dataset records can be any size you choose. The size of the records is determined when the dataset is created. Contact your account director to create a dataset file if you do not have account director capabilities.

Data manipulations within the dataset are done through the records. The dataset essentially allows you to choose the format of the data structure and store information according to that format.

Datasets are useful for storing information which, because of its quantity or structure, may be conveniently accessed in relatively small blocks from a possibly much larger pool. Datasets allow you to take one or more records and bring them into the variables your lesson is using, and to take one or more records of the variables in your lesson and make a copy of their values into the dataset. You can also take information contained in your lesson variables and transfer the information into and out of the dataset.

For more information on datasets, refer to the AIDS What TUTOR Feature display and type datasets.

NAMESET FILES

Nameset files are similar to dataset files only in function. A nameset is composed of one or more sets of names with a variable number of records associated with each name. Each nameset contains an alphabetical directory of the names in the nameset. All operations related to reading and writing records are defined by the name.

The length of a nameset is determined by the number of parts it contains. Namesets can contain up to 63 parts. Records can be between 64 and 512 words long. The system default record size is 320 words. The size of the nameset is determined when the nameset is created. Contact your account director to create a nameset for you if you do not have account director capabilities.

Namesets provide more flexibility for organizing data than datasets. Each name within the nameset can be considered a dataset in which records can be inserted or deleted. Names can also be added or deleted at will.

For more information on namesets and to learn how to use them, refer to the AIDS What TUTOR Feature display and type namesets.

CODE FILES

Code files store any non-PLATO Author Language code or text. They are similar to TUTOR files as they contain parts and blocks and are edited with the PLATO system editor. Code files, however, can not be condensed or executed as lessons and are never changed by TUTOR conversion programs. The maximum size of a code file is 18 parts.

For more information on code files, refer to AIDS or contact a PLATO on-line consultant.

USING ADVANCED AUTHOR OPTIONS

Authors have a wide range of PLATO system features available to them. Many of these features are designed to be used in conjunction with specific functions performed by authors (for example, the Q-ref feature is used for quick help while coding a lesson). Some features, however, are unique and consequently are difficult to associate with another author function or activity. Other features require an author to have a thorough understanding of several other system features before they can be effectively used.

The following paragraphs describe some of the unique and complex features available to authors.

TERM-pnote

You can write a personal note from anywhere on the PLATO system by using the TERM-pnote feature. To use TERM-pnote, press TERM (hold the SHIFT key down while pressing the TERM/ANS key), type pnote, and press NEXT. The system responds by erasing the bottom two lines of your screen and displaying the Personal Notes Address display. Type the name, group, and system of the person to whom you are sending the note and press NEXT. The system asks you to verify what you typed by pressing NEXT if the address is correct, or BACK to change it. Type your note. As you type, the text appears to the right of the arrow. Press NEXT for a new line, BACK to see previous lines typed, or HELP for more information. Press SHIFT-NEXT to send your note when finished, or SHIFT-BACK to cancel the note. The system returns you to your original activity.

SETTING AN ALARM

You can set an alarm on the PLATO system to alert you at a specified time. When you set an alarm, the alarm and message are sent to you no matter where you are on the system.

To request an alarm, press the SHIFT key and type Z from the Author Mode display (if you are an author), or select the Choose a Lesson to Study option from the PLATO Facilities display, type alarm, and press NEXT (if you are an instructor). The system displays the Request an Alarm display. From this display, you can set the time you want the alarm to go off (within 24 hours) and type the message you want to appear with the alarm.

You can only have one alarm set at a time. If you set one alarm and then set another, the first alarm is deleted and the alarm is reset to the second time.

USING AN AUTOMATIC SIGN-ON

As an author, you can request to have an automatic sign-on (auto sign-on) assigned to you from PLATO Services. An auto sign-on allows you to sign on to the PLATO system using a partial sign-on at a specific terminal (for example, typing only your password at the terminal in your office).

NOTE

Direct connection terminals are the only type of PLATO terminal with which an automatic sign-on can be used. Refer to Connecting the PLATO Terminal in section 1 for information on direct connection terminals.

When you request an auto sign-on from PLATO Services (any user in PLATO group p or pso), you can select the type of auto sign-on you want to use. The type of auto sign-on you select determines which part(s) of your sign-on you type in order to sign on to the PLATO system. Several options are available for you to choose from. The most frequently used auto sign-on requires you to type your password only. Other available options allow you to type both your name and password or choose a new password the first time you sign on using your auto sign-on. Whichever option you choose, PLATO Services registers the appropriate sign-on and terminal information into the auto sign-on roster for you.

USING AUTHOR RESERVED TERMS

Some PLATO system features are available only to authors. Four of these features are TERM-cursor, TERM-grid, TERM-step, and TERM-charset. These four TERMS are restricted to authors use only since they are tools used when coding a lesson. (Refer to section 2 for information on how to use other TERM features available to all users.)

TERM-cursor

The TERM-cursor feature finds locations on the screen through a small cursor which marks the current screen location. Press the arrow keys (a, z, x, c, and so on) to move the cursor on the screen. Each keypress moves the cursor one character space if you are in gross grid and one dot if you are in fine grid. Press the shifted arrow keys to move eight character spaces in gross grid or eight dots in fine grid. The current screen location is displayed in the lower right corner of your PLATO terminal screen.

To switch from gross grid to fine grid, type f; to switch from fine grid to gross grid, type g. TERM-cursor also activates the touch panel, allowing for touch-directed movement of the cursor.

To use TERM-cursor, press TERM, type cursor, and press NEXT. To leave TERM-cursor and return to your previous activity, press BACK or SHIFT-STOP.

Study the PLATO on-line lesson øtermcurso for more detailed information on how to use this feature.

TERM-grid

TERM-grid draws a grid of touch panel squares over your current screen display. The touch panel divides the screen into 256 squares. TERM-grid, however, does not activate the touch panel. The grid stays on your display until you go to a new display.

To use TERM-grid, press TERM, type grid, and press NEXT.

TERM-step

TERM-step allows you to proceed, step-by-step, through a lesson (of which you know the security code) one PLATO Author Language instruction at a time. In step mode, the lesson commands are displayed one at a time in the same sequence as the commands are executed. Executing the lesson in this manner is useful in finding programming errors.

Step mode can be accessed in two ways.

- While executing the lesson as a student, press TERM, type step, and press NEXT. The step mode is initiated from that point in the lesson.

- Enter a -step- command(s) in the lesson just ahead of the point of interest. Acceptable tags include: on, off, or a suitable expression ($\emptyset$=off, non$\emptyset$=on). Existence of this command in the lesson in no way affects student execution of the lesson.

In step mode, the bottom lines of the screen display the current, main, and base units of the lesson, the state (judging or regular) the lesson is in, and the next command that will be executed when you press NEXT. Each time you press NEXT, the command presently listed is executed and the succeeding command is then displayed. The values of variables may be examined at any time in step mode.

The Waiting for Key message means that the system is waiting for a student response or keypress. To continue in step mode, enter a response and press NEXT.

The arrow at the bottom of the screen enables you to see the current values of any of the student variables. Press HELP for information. Press either a (alpha), o (octal), v (floating point), or i (integer) to indicate the desired format. At the second arrow, enter one of the following variable types followed by the variable number. (At the second arrow, you can also enter error or zreturn and see the value of those variables.)

n   n variable; n1 for the first variable, n150 for the last.

nc   nc variable, stoloaded or comloaded variable.

nr   router.

c   common.

s   storage.

l   local.

Variables in the defined set student may be requested by typing in the defined name.

Typing s and a number (at the arrow) skips forward that number of commands before reentering the step mode. To examine more than one student variable at a time, press SHIFT-DATA.

Press BACK to terminate TERM-step.

For more information on TERM-step, refer to the AIDS What TUTOR Feature display and type step.

TERM-charset

TERM-charset is used to reload the character set of a TUTOR lesson that has been destroyed by communications line errors. It is intended as an aid for students as it reloads the character set of a lesson they are using without having to reaccess the lesson. It is also intended as an aid for authors as it removes the necessity of coding this type of protection into each lesson.

ADDITIONAL SECURITY OPTIONS

Most files on the PLATO system have several security codes associated with them. These security codes control various kinds of access to files (such as change access and inspect access). Each time you attempt to access a file, the PLATO system requires you to type or match the file's security code. (For example, if the file has a typed security code, you must type the security codeword of the file in order to access the file; if the file has a GROUP or ACCOUNT code, you must be in that group or account in order to use the file.)

Each time you type the security codeword of a typed coded file, that security codeword is stored in your author record. This codeword remains in your record until you type a different security codeword for another file. The new codeword then replaces the first one you typed and is stored in your author record until another new codeword is typed, and so on.

Since your author record stores the last codeword you typed, you can consecutively access files which have that same typed codeword without typing the codeword each time. However, if you attempt to access a file which has a different codeword than the one last stored in your author record, the PLATO system requires you to type the security codeword associated with that file in order to see the file. That codeword then replaces the codeword previously stored in your record and enables you to access files which have the same codeword without typing the codeword each time.

Although the stored codeword feature makes it convenient for you to consecutively access several files with shared typed codewords, it also increases the risk of unauthorized users accessing some of your files in the event your sign-on is stolen. Since the file codeword you last typed is stored in your author records, any person using your sign-on could gain access to all your files which have the same codeword as the one last stored in your author records. You can protect these files by changing the codeword last stored in your author records before signing off the system. Changing the stored codeword eliminates the risk of your files being accessed in this manner.

To change the stored codeword in your author records, press SHIFT and type S from the Author Mode display. Type anything that cannot be easily guessed by other users, and press NEXT. You do not have to remember what you typed as this is changed the next time you attempt to access a file and type the file's codeword.

<div style="text-align:center">

| NOTE |

Although this added security measure helps protect your files from access by unauthorized users, it does not in any way reduce the importance of protecting your sign-on password.

</div>

ADDITIONAL SHIFT-DATA DISPLAY OPTIONS

Although the Author Mode display does not contain a list of options to choose from to access features, the SHIFT-DATA display contains a list of options which can be used from the Author Mode display. The SHIFT-DATA display functions as a reference tool which reminds you of what key to press to access a specific feature. All the SHIFT-DATA options are accessed from the Author Mode display by typing the shifted letter of the option. To reach the SHIFT-DATA display, press the SHIFT-DATA keys from the Author Mode display. Refer to The Author Mode Display earlier in this section for more information on the SHIFT-DATA display and for a list of the most frequently used options. The remaining SHIFT-DATA options available to most authors are:

Letter to Type to Access	Title	Description
B	bulletin board	Lists new PLATO system features and special notices authors should be aware of.
C	charset	Allows you to load or inspect a character set from any lesson for which you know the inspect codeword.
D	desk calculator	Performs simple numerical calculations and gives the answer in integer, octal (floating point and integer), hexadecimal, and binary. Also gives the alphabetical equivalent of the number.
E	ECS usage	Lists how ECS (computer memory) is being used at your logical site and the amount of ECS allotted.
I	information on records	Supplies information about your talk options and your use of the PLATO system. Allows you to set and change these options.
J	j-stack	Allows you to set a marker while editing. This option is not available from the SHIFT-DATA display, but can be reached from the Author Mode display (by typing SHIFT-J) and while editing a file. Refer to AIDS for more information.
L	lineset	Allows you to inspect any lineset in any lesson for which you know the inspect codeword.
M	micro	Allows you to inspect any micro table in any lesson for which you know the inspect codeword.
Q	questions	Displays the AIDS What TUTOR Feature display and allows you to request information on a PLATO system feature or PLATO Author Language command.
S	security code	Allows you to change your lesson security code.

Letter to Type to Access	Title	Description
T	time	Displays the current time of day.
V	version	Displays information on the current version of the PLATO system in use.
W	write common	Allows you to write ECS common back to disk.
X	lesson search	Searches a lesson or set of lessons for occurrences of specific character strings.
Z	alarm	Allows you to write a message and specify a time for the system to display the message to you.

MICRO PLATO AUTHORING

The following information provides an overview of authoring for the Micro PLATO system.

Authoring for Micro PLATO is done on a central PLATO system using an author record, a standard TUTOR file, and the Micro PLATO Language.

The Micro PLATO Language is executed within a PLATO terminal and may be used to direct a PLATO terminal in three ways.

- A lesson can be prepared for delivery from a flexible disk attached to an IST-II or IST-III terminal. In this case, the code is written and condensed on a central PLATO system and copied onto a flexible disk. This is anticipated to be the most frequent application for the Micro PLATO Language.

- Up to 20 units can be downline loaded from a central PLATO system into an IST-II or IST-III terminal at one time, to be executed one at a time within the terminal while the terminal is still connected to the central system. While connected to a central PLATO system, a terminal can either alternate between executing a lesson on the central system and executing a down-line-loaded unit, or it can execute both simultaneously. While executing both locally (within the terminal) and centrally, the central system retains control of all local execution.

- While executing on a central PLATO system, a unit can be downline loaded into an IST-II or IST-III terminal which can then use data stored on an attached flexible disk. One example of such a use is a sophisticated simulation requiring rapid graphics plotting (terminal execution using data on a flexible disk) and complex calculations (central system). Again, when both central and local execution are used together, control over both programs is retained by the central PLATO system.

MICRO PLATO FILE SECURITY

When authoring for the Micro PLATO system, file security has two meanings. The traditional control of who can inspect or change the code within a given file remains the same. The additional control is control over who can copy a file onto a flexible disk. No new codeword has been added for this purpose. Any author who knows either the change or inspect codeword of a file can copy it onto a flexible disk. Published files are subject to additional checks to prevent them from being copied onto flexible disks by anyone outside of specified Control Data groups.

Default codewords assigned to a file when it is created can be very general, and may allow access to all users on a system or all users within an account or group. You should reevaluate these default codewords in light of this extended definition to ensure adequate file security.

MICRO PLATO LEVELS

With the installation of Cut 23 of the PLATO system software, an additional option titled Micro PLATO Level will appear on the Block Directory display of each TUTOR file. The Micro PLATO level represents a defined set of commands in the Micro PLATO Language that can be identified and executed by a particular version of the Micro PLATO system software. One can view the Micro PLATO level as parallel to the numbered cuts of the central system software.

The Micro PLATO level of a file will first be established when a TUTOR file is created, indicating the level in use at the time a file is created. This level can be changed to any other identified level by any author who knows the lesson change code.

The Micro PLATO level specified in a given file identifies the file as requiring a particular version of the Micro PLATO system software to be executed, and identifies to the central PLATO system that version of the Micro PLATO system software to be copied onto a flexible disk along with the file.

MICRO PLATO LESSON EXECUTION

Micro PLATO lessons are executed within a PLATO terminal that contains a microprocessor. Lessons prepared to be delivered from a flexible disk are delivered only from a flexible disk to the PLATO terminal, and cannot be executed on a central PLATO system.

Micro PLATO lessons are condensed on a central system, and then copied onto a flexible disk to be executed. Complete lessons or identified units within a lesson can be copied from a central system onto a flexible disk. Once copied onto a flexible disk, a Micro PLATO lesson can be executed within the terminal from the disk while the terminal is connected to the central system by an author or without central system connection by any user.

As with the central PLATO system, lesson execution refers to the sequential reading and interpreting of binary code created by the process of condensing a lesson and the subsequent presentation of a lesson on a terminal screen. All system software necessary to interpret the condensed code from a flexible disk is stored on the flexible disk with lesson binaries. This Micro PLATO system software includes a copy of the Micro PLATO Language interpreter and supportive system lessons. The interpreter directs the reading and execution of every command.

Critical to your understanding of Micro PLATO lesson execution is the knowledge that the interpreter copied onto a flexible disk is tied to a Micro PLATO level. The interpreter is capable of dealing with only the set of commands associated with a given Micro PLATO level. Only one interpreter can be copied onto a given flexible disk. Therefore, all lessons on a flexible disk should be of the same Micro PLATO level.

Before a lesson is executed in a Micro PLATO terminal, the Micro PLATO interpreter is loaded into the terminal from the flexible disk if you are using the Micro PLATO Station as a student. An author may choose to load the interpreter either from the flexible disk or the central system. The interpreter directs the reading and execution of every command. Because the entire binary of a lesson and the system code to support its execution cannot all reside in the terminal memory at one time, segments of both lesson binary and system code are read from the flexible disk into the terminal when they are needed. The interpreter directs the movement of required data from the flexible disk to the terminal memory.

FLEXIBLE DISK PREPARATION

Before any new flexible disk may be used, it must be prepared for use. This is called formatting. Formatting is simply the imposition of a bit pattern on the surface(s) of the disk. This pattern is required by the flexible disk subsystem to locate particular points on the disk; for example, the starting point of a particular lesson.

An author must use the system-supported lesson "floppy" to format a disk, to copy a file from a central system to a flexible disk, or to do anything to a flexible disk. Lesson "floppy" offers the following general options.

- Format a disk.

- Initialize disk directory (reuse a disk).

- Reinitialize system overlay files (change the Micro PLATO level).

- Set or reset the router name.

- Copy files from a central system to a disk.

- Copy individual units from a central system to a disk.

- See a list of files on a disk.

- Rename a file on the disk.

- Destroy a file on the disk.

- Create a dataset on the disk.

- See terminal/disk drive/Micro PLATO level information.

- Copy from one disk to another.

- Load lesson "floppy" into the terminal memory from a central PLATO system.

- Load lesson "floppy" into the terminal memory from the flexible disk.

- Execute a lesson from a flexible disk while still connected to the central system.

The last three options are most useful during the testing and debugging process.

THE MICRO PLATO ROUTER

A common definition of the word router is a lesson with special characteristics, including capabilities to collect student data (beyond that accumulated in the student variables), group lessons into modules, and direct (and to some degree control) a student's lesson choices.

A parallel system-supported router for Micro PLATO is not available at the time of this writing (with the Cut 22 release of the PLATO system software). With the Cut 22 version of the Micro PLATO authoring capability, a router is simply the first lesson executed when a flexible disk is placed in the flexible disk subsystem by a user. The student user returns to the router whenever SHIFT-STOP is pressed in a lesson, or when a -jumpout- with a blank tag is executed. Pressing SHIFT-STOP or executing a blank tag -jumpout- in the lesson identified on a flexible disk as the router, will cause a student user to leave the Micro PLATO system.

AUTHOR REFERENCES

For more detailed information on authoring for the Micro PLATO system, refer to the AIDS What TUTOR Feature display and type micro plato language. Authors wishing to prepare lessons for delivery from a flexible disk will want to begin reading about the -μtutor- command. Such lessons must have at least one -unit- of code in the PLATO Author Language preceding the first -μtutor- command. Authors interested in downline loading units while executing on a central system are referred to the -loadu- and -runu- commands. Authors wishing to use a flexible disk and the central system simultaneously should refer to -loadu-, -runu-, -attach-, datain- and -trap play- commands.

SECTION 5

USING ACCOUNT OPTIONS

USING ACCOUNT OPTIONS

This section describes the functions of account owners and account directors and defines and describes how to use the PLATO system features available to them.

The information in this section is presented in two parts. Each major topic or subject area gives a general overview of the information contained in that section and follows with specific information on how to accomplish the tasks. Authors and instructors who are not account owners or directors but who are interested in learning what the functions of account owners and directors are should read the general information sections. Authors and instructors who are account owners or directors should read all parts of this section to learn how to perform the functions assigned to account owners and directors.

GENERAL ACCOUNT INFORMATION

Your PLATO account contains a definition of the services your company, school, or organization purchased with the PLATO system. It contains information on the number of people who can simultaneously use the system, and also keeps a record of the amount of file space purchased and used to date. A file is a finite set of data. The space within the computer system which stores this data is called file space. File space is a defined, finite subset of a file. (Group records, notes files, lessons, and so on are examples of files.)

There are serveral types of files available on the PLATO system. Different types of files are used to store different types of data. Although file types differ as far as the kinds of data they are designed to store, most files are structured similarly. Each file contains a specific number of parts (parts are equivalent to file spaces). Each part is capable of storing a specific amount of data. The number of parts in each file determines the length of the file. The file length (or number of parts) is assigned when the file is created. There is, however, a maximum number of allowable parts for each file type. Table 5-1 lists the different types of PLATO system files, their primary functions, and maximum allowable sizes.

Each account is allotted a specific number of file spaces when the account is established. This file space is allocated to users in the account. All files created from the account file space are part of the account and are managed by the account. For example, a group file created from the file space allocated to an account would be a part of or belong to that account.

ACCOUNT OWNERS AND ACCOUNT DIRECTORS

When an account is created, one person is assigned overall responsibility for control of the account. This person is the account owner. The account owner is the primary authority for the account and is responsible for managing the leased file space and contracting with Control Data to arrange PLATO services for the account.

Account owners can choose to delegate or share responsibility for management of the account with other authors or instructors. Authors and instructors who share responsibility for the account with the account owner are called account directors. Account directors have access to the account and share joint responsibility for the account with the account owner. There is very little difference in the capabilities of or the options available to the account owner and the account directors. (Refer to Using an Account Access List later in this section for differences.)

TABLE 5-1. FILE TYPES

File	Maximum Size	Function/Use
Normal TUTOR lesson file	10 parts	Stores PLATO Author Language code for PLATO lessons.
Router lesson file	10 parts	Controls lesson sequencing for all students in a group.
Group file	63 parts	Contains collection of user records.
Personal notes file	63 parts	Stores personal communications among PLATO system users.
Instructor file	2 parts	Contains list of lessons and module descriptions for curricula using "mrouter".
Student notes file	18 parts	Stores communications between students and their instructors.
Student datafile	18 parts	Collects student data from students in a specific group or groups.
General notes file	18 parts	Stores notes on discussion of specific topics.
Dataset file	63 parts	Stores large amounts of data.
Nameset file	63 parts	Stores large amounts of data accessible by named sets of records.
Code file	18 parts	Stores programming code other than PLATO Author Language code.
Documentor file	63 parts	Stores and organizes large amounts of text.
PLM group file	63 parts	Contains student sign-ons and student data.
PLM curriculum file	37 parts	Contains PLM curriculum design information and management strategies.
PLM module file	63 parts	Contains PLM learning objectives, test questions, learning resources, and scoring strategies for PLM curricula.

An account owner's or director's responsibilities concentrate on account management. Account management involves: controlling the leased file space by monitoring and controlling the availability and allocation of file space by creating and deleting files; establishing and maintaining account security and controlling user access to the account; renaming, lengthening, and shortening files; and establishing local user rules for use of the system.

The remaining information in this section discusses why and how an account owner or director performs the tasks involved in account management.

USING YOUR PLATO ACCOUNT

As an account owner or director, you can see information on your account and perform file management operations from the Account Main Options display and the General Account Information display. These displays contain account and file security information, general account data, and options which allow you to perform account and file management operations.

ACCOUNT MAIN OPTIONS DISPLAY

The Account Main Options display (figure 5-1) contains a list of options which allow you to perform several account and file management tasks. From this display, you can choose to create and destroy PLATO and PLATO Learning Management (PLM) files, see a list of all the files in your account, transfer files to other PLATO systems, see a list of users in the account who are currently using the system, generate reports, and perform several other management operations. The complete Account Main Options display contains 10 options. However, not all accounts have access to all 10 options. Only the options your account owner contracted for appear on your Account Main Options display.

```
Account --------------- testa on minne

Disk parts remaining -- 254

        NEXT for PLATO and PLM file management options


    a.   Display file data

    b.   Lesson usage data

    c.   Current users in this account

    d.   Report generator options

    e.   Group records report generator

    f.   Archive options

    g.   Print access control options

    i.   Inter-account options

    j.   Network options


    DATA for General Account Information

    HELP available
```
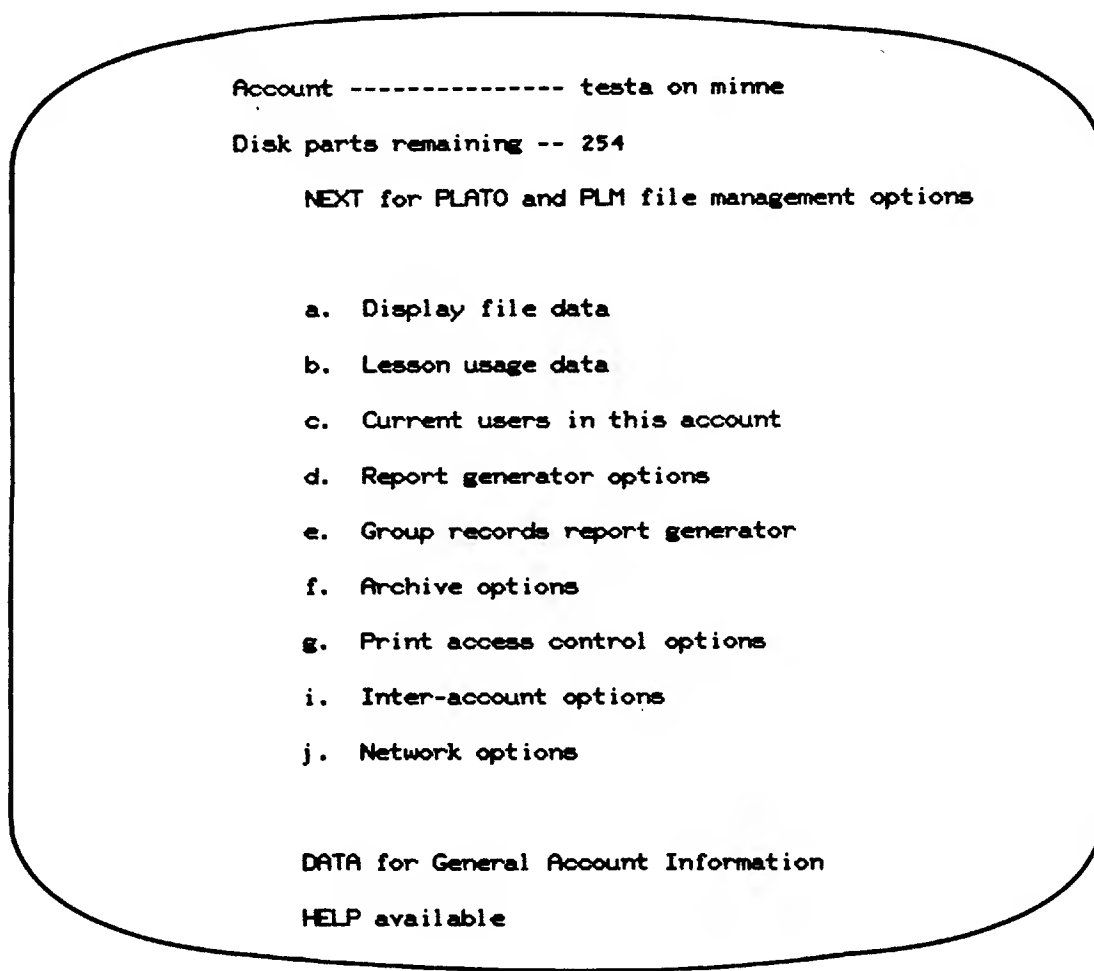
Figure 5-1. Account Main Options Display

To reach the Account Main Options display, type the name of your account on the Author Mode display and press NEXT, or choose the Account Transactions option on the PLATO Facilities display and press NEXT. Type the security code of the account (if required) and press NEXT.

The options available on the Account Main Options display and their descriptions are:

PLATO and PLM File Management Options

Allows you to create, inspect, copy, and destroy files in your account. Refer to Managing File Space later in this section for information on how to perform these file management operations.

Display File Data

Allows you to see a list of all the files in your account, see a list of the file operations performed, make a leslist of files in your account, and see which users last edited the account and the changes that were made. Refer to File Space Management Tools later in this section for information on how to use this option.

Lesson Usage Data

Allows you to see which accounts or users are using selected lessons in your account. Refer to Lesson Usage Data later in this section for information on how to use this option.

Current Users in this Account

Allows you to see a list of users in your account who are currently signed on to the PLATO system. Refer to Listing Current Account Users later in this section for information on how to use this option.

Report Generator Options

Allows you to copy information about your account and its files into a dataset file in a form suitable for printing. Refer to Report Generator Options later in this section for information on how to use this option.

Group Records Report Generator

Allows you to copy group records information into a dataset file in a form suitable for printing. Refer to Group Records Report Generator Options later in this section for information on how to use this option.

Archive Options

The archive options are being developed at the time of this writing (Cut 22 of the system software) and are not yet available to all accounts. When released, the archive options will allow you to archive files (remove them from the active system) and remove files from archives, and allow you to see a list of archived files.

Print Request Access Options

Allows you to determine which users or groups of users in your account can request prints of files in the account. Refer to Controlling Print Access later in this section for information on how to use this option.

Interaccount Options

Allows you to copy or move files from one account to another account on the same system. Refer to Using Interaccount Options later in this section for information on how to use this option.

Network Options

Allows you to send files to or receive files from other PLATO systems, see a listing of file transfer requests from your system, connect intersystem notes files, and destroy files in your account on another system. Refer to Using Network Options later in this section for information on how to use this option.

GENERAL ACCOUNT INFORMATION DISPLAY

The General Account Information display (figure 5-2) contains general information about the account, as well as specific information about account and file security. From the General Account Information display, you can see the following kinds of information:

- The sign-on name and group of the account owner.

- The number of disk parts assigned to and used by the account.

- Statistics on the number of files and subscriptions (the number of users who can simultaneously use the PLATO system) in the account.

The General Account Information display also contains a list of options which allow account owners and directors to:

- Set and change file and account security using security codewords or an access list.

- Attach datafiles for recording networking operations information (if the account has contracted for networking features).

- Determine whether or not to allow systems personnel access to the account.

- Specify a lesson notes file to collect student comments about newly created lessons in the account.

To reach the General Account Information display, type the name of your account on the Author Mode display and press NEXT, or choose the Account Transactions option on the PLATO Facilities display and press NEXT. Type the account security codeword (if required) and press NEXT. The system displays the Account Main Options display. Press DATA for the General Account Information display.

```
Account ----------- testa on minne

Account Owner ----- renee lavalley / s

     Disk parts remaining -  262
     Disk parts allotted --  400        HELP is available.
     Files in account -----   47
     Subscriptions --------    0


     1.   Inspect code ---------------- No code--owner only
     2.   Data change code ------------ No code--owner only
     3.   File change code ------------ No code--owner only
     4.   Access by system personnel -- ALLOWED
     5.   Account access list --------- This account file

     a.   Lesson Notes File -----------
     b.   Default file change code ---- GROUP s
     c.   Default file inspect code --- ACCOUNT system
     d.   Network log datafile -------- rrl2
     e.   Network alternate log file -- rrl1


Press the number or letter to change an item.
Press      DATA for lesson access classes for this account.
Press SHIFT-NEXT to inspect or edit the account access list.

Account last changed on 11/03/80 at  9:00:33 am
by renee lavalley / s at station 0-4

destroy file zrrlact
```

Figure 5-2. General Account Information Display

MAINTAINING ACCOUNT SECURITY

Account owners and directors are responsible for maintaining the security of the account and the files within it. The account options and system features available to account owners and directors are powerful and many can be damaging if misused by unauthorized or inexperienced users. It is important for account owners and directors to protect the security of the account by regulating access to the account and controlling the kinds of operations users can perform within the account.

There are two types of security controls available for account owners and directors to use to protect their account and files from unauthorized use. These security controls are codewords and an account access list (a combination of the two can also be used). Codewords and access lists regulate which users, other than the account owner, can access the account and which options are available to those users. Each type of security control has several options associated with it to allow different levels of security to be assigned. The type of security used for each account (codewords or access lists) depends upon the degree of security needed in the account.

The following describes codewords and access lists and explains how and when to use them. (The access list information also describes how to use codewords within an access list.)

USING SECURITY CODEWORDS

Security codewords are used to control which users besides the account owner can access the account and to determine the kinds of options which are available to them. For example, the account owner can set the security codewords of an account so that only the account owner can see or change account information and related files, only selected users can see and/or change the account and files, or only authors and instructors within a specified group or account can see and/or change the file.

There are four types of security codes which can be set for an account. These codes and their descriptions are:

No code	Restricts access to the account owner only.
Typed code	Requires all users to type a security codeword in order to see and/or change account information and files.
GROUP code	Allows all authors and instructors within a specified group to see and/or change account information and files (without typing a codeword).
ACCOUNT codes	Allows all authors and instructors within a specified account to see and/or change account or file information (without typing a codeword).

All security codeword settings are made on the General Account Information display. The account owner is the only person who can initially set or change information on the General Account Information display. This restriction prevents unauthorized users from changing security information and excluding the account owner from the account. To reach the General Account Information display, type the name of your account on the Author Mode display and press NEXT, or choose the Account Transactions option on the PLATO Facilities display and press NEXT. Type the security code (if required) and press NEXT. The system displays the Account Main Options display. Press DATA for the General Account Information display. Information about each of the options on the General Account Information display is available by pressing HELP.

To set security codewords on the General Account Information display, choose the option you want to set a codeword for by typing the number in front of the option. Do one of the following steps depending upon the type of code you want to use.

No code   Press NEXT without entering anything at the arrow.

Typed code   Type a codeword and press NEXT. A random number of X's appear to the right of the arrow as you type. The system asks you to retype the codeword to verify it and help you remember it. Press NEXT.

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NOTE

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It is important to be creative when choosing codewords. Do not use obvious codes such as your spouse's name; the name of your group, account, or file; your pet's name; your password or telephone number; a period, or other codes users can easily guess. Choose something with which only you can identify.

GROUP code   Press LAB. The system displays a GROUP option and an ACCOUNT option. Type the number in front of the GROUP option.

ACCOUNT code   Press LAB. The system displays a GROUP option and an ACCOUNT option. Type the number in front of the ACCOUNT option.

USING AN ACCOUNT ACCESS LIST

An account access list is used to control user access to the account and to control which operations those users can perform within the account. An account access list contains a list of systems, accounts, groups, and sign-ons of users who are allowed access to account information, and a list of the account operations users are authorized to perform. The account access list is created by the account owner. Each time a user attempts to access the account, the PLATO system checks the account access list and permits only those users whose sign-on or user type and group appears in the access list to see account information or use specific features. It also restricts access to only those options which are authorized for a given user.

The account owner is the only person who can create and initially insert information in the account access list. The account owner is also the only person whose name does not have to appear in the access list in order to see or change account information. Account owners can delegate the authority to edit the account access list to other account directors. Caution should be used in doing so as this allows other users to make major changes without the account owner's knowledge. The account owner, however, can never be prohibited from accessing the account by another user since the account owner is the only person whose name is not required to appear in the account access list in order to access the account. This prevents other users from illegally controlling the account. Because of this security measure and because an access list does not rely solely on codewords for security, account access lists can be more effective for account security than codewords.

Creating an Account Access List

To create an account access list, you must be the account owner. The following steps describe how to create an account access list.

1. Type the name of your account and press NEXT on the Author Mode display or choose the Account Transactions option on the PLATO Facilities display, type the name of your account, and press NEXT. The system displays the Account Main Options display.

2. Press DATA. The system displays the General Account Information display.

3. Select the Account Access List option by typing the number in front of the option. The system asks you to type the name of an account containing an access list. Do one of the following steps.

    ● Press NEXT to create an access list in the account you are presently using.

    ● Type the name of another account which contains an access list you want to use. (To use the access list of another account, you must be the account owner of that account's access list.) Press NEXT.

NOTE

Occasionally, when attempting to create an account access list, you might receive a message indicating there is not enough space in your account to add an access list. If this occurs, contact someone on the local operations staff (group p and pso) and ask them to lengthen your account to add space for the access list.

Registering Users in the Account Access List

Access can be assigned either to individual users (jane doe/school/minna) or to classes of users (Author/library/minnb—all authors in group library; Instructor/school/Local—all instructors in account school on Local). Users are identified in the access list either by name/group/system; user type/group/system; or by user type/account/system. In addition, all account and access lists contain a reference to Other/Other/Local. The Other/Other refers to all names, groups, accounts, and user types not specifically listed. The access assigned by the PLATO system to Other/Other is NONE to ensure no access to persons not listed. (Local is a system designator; it refers to the system on which your account resides.)

The following steps describe how to register users in the account access list.

1. Press SHIFT-NEXT from the General Account Information display. The system displays the Access Options display (figure 5-3).

```
 ┌──────────────────────────────┐
 │ File  name :   testa         │
 │ Block name:   access         │
 │ List  for :   accounts       │
 └──────────────────────────────┘
         Space left = 22Ø

           ACCESS OPTIONS


    1.  to see or edit access for people
        on same system as account

    2.  to see all listed signons

    3.  for special options

    4.  to see or edit access for people
        on another system




  Press:
           DATA       for usage information
           BACK       to exit (save changes)
       SHIFT-HELP     to exit (abort changes)
           HELP       for more information
```

Figure 5-3. Access Options Display

2. Do one of the following steps:

   ● Type the number in front of the option which allows you to see or edit access for people on your system to assign access to users on the same system you are using.

   ● Type the number in front of the option which allows you to see or edit access for people on a different system to assign access to users on a system other than the one you are using. Refer to Registering Users on Your System and Other Systems later in this section for more information on this option.

3. Type the name of the group or account you want to add and press NEXT.

4. Type either the name of a user in that group or account or type A or I to include all authors or all instructors in the group or account, or type O to include all authors and all instructors in the group or account. Press NEXT. The system displays the User Access Options display (figure 5-4).

```
Change access for:  prometheus / mythical / Local

        Current access:

          Inspect

    A.  Director
    B.  Director / Code          1.  Inspect and Data Options
    C.  File
    D.  File / Code              2.  File Options
    E.  Data
    F.  Data / Code             3.  Special Options
    G.  Inspect
    H.  Inspect / Code
    I.  None




    Press a key to set access options

    HELP available
```

Figure 5-4. User Access Options Display

Assigning Access Options

There are approximately 20 options in the account access list that can be assigned to users. These options can either be assigned individually (that is, options a, b, c, and so on) to create a unique combination of options, or they can be assigned by option category. There are four categories of options from which to choose. These categories consist of preset combinations of options that provide different levels of account access.

The four available access options and the types of account operations that can be performed with them are:

Director	Can use all account options and can edit the access list.
File	Can do everything a user with Director access can, except edit the access list, allow access to networking features, and allow a user to move files to another account on the same system.
Data	Can clear lesson use data, generate reports on files and groups, and see a list of users that are signed on.
Inspect	Can examine but not change information in the account.

The option categories can be assigned with or without codewords. The codeword option gives an additional level of security, guarding against access to your account by someone using a stolen sign-on. When a category of options is assigned with codewords, the user must know the appropriate account codeword (for example, the File codeword for File access), in addition to being listed in the access list.

In addition to these four levels of access, you can assign various combinations of authorizations to specific users. For example, it is not necessary to give a user complete File access; instead, you can authorize only certain operations. For instance, a user can be assigned the authorization to lengthen or shorten files, but not create or destroy files. Or, a user can be allowed to do file operations, but not to reinitialize the accounting data. (Any combination of authorizations other than the four main access levels is considered Special access.)

All access options are assigned on the User Access Options display (figure 5-4). This display contains three options from which individual access options can be assigned and four categories of options from which preset groups of options can be assigned.

To assign a specific category of options to a user, type the shifted letter in front of the category of options you want to assign. For example, to assign Director access, type SHIFT-A. To assign individual options to a user, type the number in front of one of the three options (Inspect and Data, File, or Special) and then type the letter(s) in front of the option(s) you want to assign. Depending upon the combination of individual options you select, the system assigns the user's access level as either one of the four option categories (Director, File, Data, Inspect) or Special access. The Special access category indicates you chose a unique set of options other than those previously defined.

ALLOWING/DISALLOWING SYSTEM ACCESS

One of the security options available on the General Account Information display allows you to choose whether or not to allow systems personnel access to your account. Systems personnel (users responsible for maintaining the PLATO system) occasionally need access to accounts and files to check for errors if hardware problems occur on the system.

If you choose to allow systems personnel access to your account, authorized users can enter the account in inspect mode without typing a security code or appearing in the account access list. While in inspect mode, they have the same options and restrictions as any user with Inspect access. Their access to the account is recorded and appears in the account log.

If you choose to restrict systems personnel from entering the account, they may not access the account without typing one of the account security codes or unless they are listed in the account access list.

Certain disk file operations, however, occasionally require that files in the account be manipulated by systems personnel, regardless of the access setting. These operations always appear in the account log and are always the last action for the account. This ensures that the systems personnel access is seen the next time the account is entered by an account owner or director or by a user with the file or data change code. An example of an occasion when systems personnel might use this type of access is during an emergency caused by a system error and conversion of files.

To allow or restrict systems personnel access to your account, type the number in front of the Access by Systems Personnel option on the General Account Information display to either select or change the access status. For example, to allow systems personnel access, type the number in front of the option. To change the access setting, type the number again.

MAINTAINING FILE SECURITY

Account owners and directors are responsible for maintaining the security of all files within the account. This responsibility is usually shared with other authors and instructors in the account for whom the files are created. When a file is created, the account director who created the file is responsible for the initial security of the file until the author or instructor for whom the file was created accesses it and changes the security setting. The author or instructor is then primarily responsible for maintaining file security. The account director, however, still maintains ultimate control over the file in that an account director can access any file in the account (with the exception of personal and general notes files) without knowing the security codes.

DEFAULT FILE SECURITY CODES

As an account director, you can secure all new files in your account with default file codes. Default file codes are automatically assigned to files when the files are created. These security codewords remain until the author or instructor for whom the file was created accesses the file and assigns new codewords. Assigning default file codewords prevents unauthorized users from easily accessing files in an account before the author or instructor for whom the file was created accesses the file and sets the security codewords.

There are two types of default file codes: default file inspect codes and default file change codes. The default file inspect code allows users to inspect but not change information in files. The default file change code allows users to see and change information in files. Security codes are assigned to each of the default codes by the account owner or director. These codes, however, are only valid until the file is accessed and the security settings are changed in the file or in the account (refer to Changing File Security later in this section).

The default file code options are located on the General Account Information display. The following instructions describe how to set each of these codes.

To set a default file inspect code, do the following steps.

1. Choose the Default File Inspect Code option by typing the letter in front of the option from the General Account Information display.

2. Do one of the following steps, depending upon the type of security code you want to set.

    ● Type a codeword and press NEXT to set a typed code. Retype the word to verify it and help you remember it. Press NEXT.

    ● Press LAB, type the number in front of either the GROUP or ACCOUNT option, and type the letter in front of the desired group or account to set a GROUP or ACCOUNT code.

    ● Press LAB and type the number in front of the unmatchable code option to set an unmatchable code.

    ● Press NEXT to set a blank code (open to all users).

To set a default file change code, do the following steps.

1. Choose the Default File Change Code option by typing the letter in front of the option from the General Account Information display.

2. Do one of the following steps, depending upon the type of security code you want to set.

   - Type a codeword and press NEXT to set a typed code. Retype the word to verify it and help you remember it. Press NEXT.

   - Press LAB, type the number in front of either the GROUP or ACCOUNT option, and type the letter in front of the desired group or account to set a GROUP or ACCOUNT code.

   - Press LAB and type the number in front of the unmatchable code option to set an unmatchable code.

For more information on the default file code options, press HELP from the General Account Information display.

CHANGING FILE SECURITY

As an account director, you can change the security codes of any files in your account. This allows you to retain control of all files within your account, regardless of the file security settings.

The security settings of a file can be changed either within the file itself or through the account using the PLATO and PLM File Management options. The following steps describe how to change file security through the account using the file management options.

1. Press NEXT from the Account Main Options display. The system displays the File Management Options display (figure 5-5).

```
Account -------------- testa on minnc
Files in account ------ 171
Disk parts allotted --- 488
Disk parts remaining -- 2

    File management options:  >

    1.  Create a file

    2.  Destroy a file

    3.  Re-name a file

    4.  Make another copy of a file

    5.  Lengthen or reorganize* a file

    6.  Shorten a file

    7.  Copy contents of a lesson

    8.  Change security/access/lesson notes file/group type

    9.  Inspect file information

  *Press HELP for information
   about file reorganization.
```

Figure 5-5. File Management Options Display

2. Choose the Change Security/Access/Lesson Notes File/Group Type option by typing the number in front of it.

3. Type the name of the file for which you want to change the security settings. Press NEXT. The system displays a list of security options related to the type of file entered.

4. Type the letter in front of the security option you want to change.

5. Do one of the following steps, depending upon the type of code you want to set.

   ● Type a codeword and press NEXT to set a typed code. Retype it to verify it and help you remember it. Press NEXT.

   ● Press LAB and type the number in front of either the GROUP or ACCOUNT code option to set a GROUP or ACCOUNT code.

   ● Press LAB and type the number in front of the unmatchable code option to set an unmatchable code.

   ● Press DATA, type the name of the file from which you want to copy information, and press NEXT to set copy security codes from another file. (The file being copied from must be the same file type.)

   ● Press NEXT to set a blank code (open to all users).

<p style="text-align:center">│ NOTE │</p>

> If a blank code is assigned, all files except group files, personal notes files, and general notes files are open to all authors and instructors for inspection. Group files are automatically assigned the default file change code if a blank code is used. (Personal notes files and general notes files do not use security codes.)

MANAGING FILE SPACE

As an account owner or director, you are responsible for managing the use of file space allocated to your account. The main purpose of file space management is to ensure there is enough file space available for all account users. This involves creating files, changing file lengths, monitoring the use of files by users in the account, and other file operations.

Every account is allotted a specific amount of file space when the account is created. The system keeps a running record of the amount of file space allotted and the amount the account has used to date on the General Account Information Display. When an account has used most of its allotted file space, the account owner or director needs to determine whether to purchase additional file space or to recycle some of the file space already being used. As an account director, you can make this decision using the file space management tools available to account directors. These management tools help you determine which files in your account are not being used, whether the lengths of the files are proportionate to the needs of the users, and whether or not there are abandoned files in the account.

Wasted file space can be recycled by destroying unused files. Destroying a file deletes the file from the system and destroys the data stored in that file. When a file is destroyed, the file space allotted to that file is recycled, thereby increasing the amount of file space available for allocation to users.

The file management tools available to account directors are located on the File Management Options display (figure 5-5). To reach the File Management Options display, do one of the following steps, depending upon your user type.

Authors   Type the name of your account on the Author Mode display and press SHIFT-NEXT.

Instructors   Choose the Account Transactions option on the PLATO Facilities display, type the name of your account, and press SHIFT-NEXT.

The following sections describe the options available on the File Management Options display and how to use them.

CREATING FILES

This option allows you to create files in your account. If you are creating a file for another user, you should obtain the following information from that user before creating the file:

- Type of file needed (TUTOR, dataset, nameset, and so on).

- File name (group name for personal notes files).

- Amount of file space needed (number of parts and records).

- Record size (for datasets and namesets).

- Name size (for namesets).

The following steps describe how to create a file.

1. Type the name of your account on the Author Mode display or the PLATO Facilities display (Account Transactions option) and press SHIFT-NEXT.

2. Choose the Create a File option by typing the number in front of the option.

3. Type the letter in front of the type of file you want to create.

4. Type the name of the file. Press NEXT.

5. Respond to the system questions.

6. Inform the user for whom the file was created of its availability.

DESTROYING FILES

This option allows you to destroy a file in your account. Destroying files is a powerful operation which should only be done when you are absolutely sure the file is not being used. Many account directors contact the author of a file before destroying it to check to make sure the file is not needed or is not being used.

The following steps describe how to destroy a file.

1. Type the name of your account on the Author Mode display or the PLATO Facilities display (Account Transactions option) and press SHIFT-NEXT.

2. Choose the Destroy a File option by typing the number in front of the option.

3. Type the name of the file you want to destroy.

4. Press SHIFT-HELP to destroy the file.

RENAMING FILES

This option allows you to change the name of any file in your account.

The following steps describe how to rename a file.

1. Type the name of your account on the Author Mode display or the PLATO Facilities display (Account Transactions option) and press SHIFT-NEXT.

2. Choose the Re-name a File option by typing the number in front of the option.

3. Type the current name of the file you want to change. Press NEXT.

4. Type the new file name. Press NEXT.

MAKING ANOTHER COPY OF A FILE

This option allows you to make a new file whose contents are a copy of an existing file of the same type.

The following steps describe how to copy a file.

1. Type the name of your account on the Author Mode display or the PLATO Facilities display (Account Transactions option) and press SHIFT-NEXT.

2. Choose the Make Another Copy option by typing the number in front of the option.

3. Type the name of the existing file which contains the information you want to copy. Press NEXT.

4. Type the name of the new file to which you want the information copied. Press NEXT.

LENGTHENING AND REORGANIZING FILES

This option allows you to increase the number of parts in a file or to change the record size of a dataset or the number of names or name size of a nameset.

The following steps describe how to lengthen files.

1. Type the name of your account on the Author Mode display or the PLATO Facilities display (Account Transactions option) and press SHIFT-NEXT.

2. Choose the Lengthen or Reorganize Files option by typing the number in front of the option. Press HELP for information on reorganizing files.

3. Type the name of the file to be lengthened. Press NEXT.

4. Type the number of parts, records, or names to add. Press NEXT.

```
NOTE
```

For certain file types, there will be other questions
to be answered.

SHORTENING FILES

This option allows you to decrease the number of parts or records in a file.

The following steps describe how to shorten a file.

1. Type the name of your account on the Author Mode display or the PLATO Facilities display (Account Transactions option) and press SHIFT-NEXT.

2. Choose the Shorten a File option by typing the number in front of the option.

3. Type the name of the file you want to shorten. Press NEXT.

4. Type the number of parts, records, or names to be removed. Press NEXT.

COPYING THE CONTENTS OF A LESSON

This option allows you to copy the contents of an existing TUTOR lesson, router lesson, or code file into another existing TUTOR lesson, router lesson, or code file.

The following steps describe how to copy the contents of a file.

1. Type the name of your account on the Author Mode display or the PLATO Facilities display (Account Transactions option) and press SHIFT-NEXT.

2. Choose the Copy Contents of a Lesson option by typing the number in front of the option.

3. Type the name of the file from which information is to be copied. Press NEXT.

4. Type the name of the file in which the information is to be stored. Press NEXT.

5. Press SHIFT-HELP.

CHANGING GENERAL FILE INFORMATION

This option allows you to change the security information of any file in your account. You can also change lesson notes files; the access list file owner, and privacy flags of general notes files; and the type of group (author/nonauthor) if your account has contracted to create author groups.

The following steps describe how to change a file's access list, lesson notes file, and group information from the File Management Options display. (Refer to Changing File Security earlier in this section for information on how to change a file's security settings.)

1. Type the name of your account on the Author Mode display or the PLATO Facilities display (Account Transactions option) and press SHIFT-NEXT.

2. Choose the Change Security/Access/Lesson Notes File/Group Type option by typing the number in front of the option.

3. Do one of the following steps, depending upon the type of information you want to see.

   ● Type the name of a file that contains information you want to change. Press NEXT. The system displays a list of attached files and security options related to the type of file entered. Go to step 4.

   ● Press NEXT to see the first file in the account. The system displays a list of attached files and security options related to the type of file entered. Go to step 4.

   ● Press SHIFT-NEXT to enter the name of a leslist which contains the names of files whose security codes or lesson notes files are to be changed. The leslist must contain the names of files to be changed and all must be of the same type (TUTOR files and router files can be intermixed, as well as namesets and datasets). The system displays a list of attached files and security options related to the type of files in the leslist. These options can then be changed. If a lesson notes file is to be changed, the change can either be made for all files in the leslist, or the old note file option can be used. If the old note file option is set to anything other than any, the lesson notes file will be changed only for those lessons whose lesson notes file previously was the one named by old notes file.

     Press HELP for more information on how to use a leslist.

4. Type the letter in front of the option you want to change.

5. Type the new information and press NEXT.

6. Do one of the following steps:

   ● Press NEXT to enter another file name.

   ● Press + to see the next file in the account.

   ● Press SHIFT + to see the next file of the same type.

   ● Press − to see the previous file in the account.

   ● Press SHIFT − to see the previous file of the same type.

   ● Press BACK for other options.

INSPECTING FILE INFORMATION

This option allows you to see the author, lesson, and security information of any file in your account. The following steps describe how to see file information.

1. Type the name of your account on the Author Mode display or the PLATO Facilities display (Account Transactions option) and press SHIFT-NEXT.

2. Choose the Inspect File Information option by typing the number in front of the option.

3. Either type the name of the file you want to inspect and press NEXT, or press NEXT (alone) for the first file in the account. The system responds by displaying information on that file.

```
┌──────┐
│ NOTE │
└──────┘
```

Typed security codes are displayed as a line of X's;
the actual security codes cannot be displayed.

4. Do one of the following steps.

    ●   Press NEXT to enter another file name.

    ●   Press + to see the next file in the account.

    ●   Press SHIFT + to see the next file of the same type.

    ●   Press – to see the previous file in the account.

    ●   Press SHIFT – to see the previous file of the same type.

    ●   Press BACK for other options.

FILE SPACE MANAGEMENT TOOLS

As an account owner or director, you are responsible for managing the use of file space in your account. Since file space is limited, it is important to regularly monitor the use of files to ensure that there is always file space available. Files which are inactive or abandoned should be destroyed so the file space can be recycled or allocated to other users.

There are several file management tools which can help you determine the status of the files in your account (which files are active, which lessons are frequently used, and which files should be destroyed). These file management tools are reached from the Account Main Options display (figure 5-1). The options on the Account Main Options display allow you to:

- See a list of all the files in your account and specific information about each of the files (security information, file owner, associated files, date file created).

- See which lessons are most frequently used and by which accounts.

- See a list of the users in your account who are currently signed onto the system.

- Collect data about which users are accessing and editing the account and the changes they made.

- Use networking features to copy and destroy files in accounts on other PLATO systems.

- Control which accounts and groups can request prints of files in the account.

To reach the Account Main Options display, type the name of your account on the Author Mode display or the PLATO Facilities display (Account Transactions option) and press NEXT. The following paragraphs describe the options available on the Account Main Options display.

DISPLAYING FILE INFORMATION

From the Display File Data option, you can request to see detailed information about the files in your account. You can see a complete list of the files in your account, as well as other file data which may be useful in helping you determine which files are frequently used and which files should be archived or destroyed.

The following paragraphs describe the options available on the File Data display (figure 5-6).

```
Account ---------- testa on minnc

File Data


    1.  List of files for this account

    2.  List of archive files for this account

    3.  Log of file operations

    4.  Inspect file information

    5.  Make a leslist of files in this account

    6.  Last editor list
```
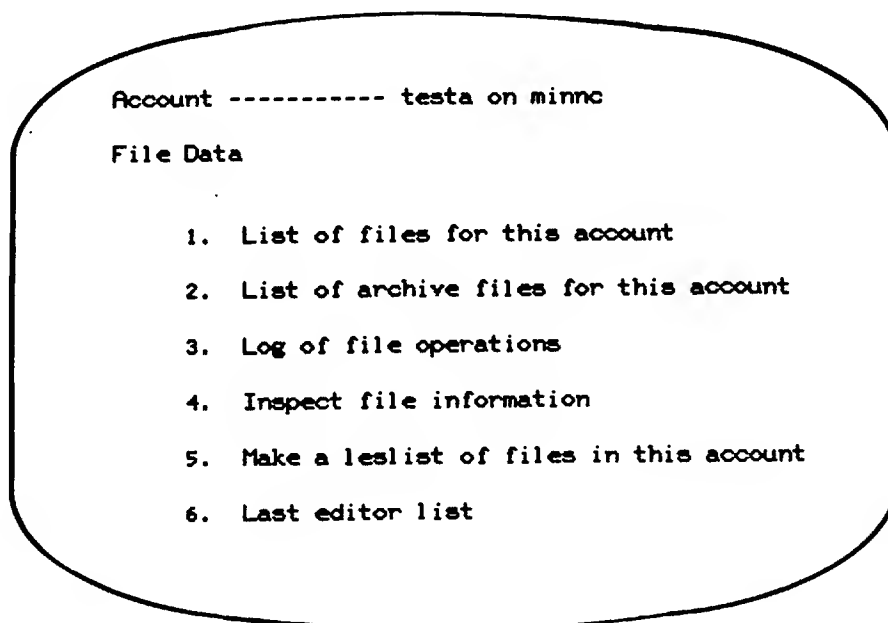
Figure 5-6. File Data Display

Listing Files in Your Account

This option allows you to see a list of all the files in your account, as well as information on the type and length of the files and the name of the master file (a Network Operating System file which contains a collection of PLATO files) on which each file resides.

The following steps describe how to use this option.

1. Type the number in front of the List of Files for This Account option on the File Data display.

2. Do one of the following steps, depending upon the kind of information you want to see with the file names.

   ● Press NEXT to see an alphabetical listing of all the files by name.

   ● Type either a specific file name or a letter of the alphabet and press NEXT to start the listing from that file or alphabetical point.

   ● Type either a specific file name or a letter of the alphabet from which to start the listing and press SHIFT-NEXT to see the length and type of each file. Select the types of files to include in the listing. Press NEXT.

   ● Type either a specific file name or a letter of the alphabet from which to start the listing and press SHIFT-LAB to see the name of the master files of the files in your account. (This option is seldom used. It is usually helpful only if something has gone wrong with a specific master file.) The system automatically displays all master files unless you select the master files to be displayed. To select specific master files to see, type – to turn off the system automatic listing. Type the number in front of the file you want displayed and press NEXT. Continue typing the numbers in front of files and pressing NEXT until you have selected all the files you want displayed. Press NEXT again to see the listing.

Listing Archived Files in the Account

At the time of this writing (Cut 22 of the system software), this option is under development and is not currently available to all accounts.

Reviewing All File Operations

This option allows you to see a list of the file operations (create, destroy, and rename files; change codewords; and so on) performed on files in the account through the account (using account options). The list contains the date, time, file action performed, sign-on name of the user who performed the file operation, and the name of the file used. It also reports operations on the account itself, such as editing the account access list, changing the number of parts allocated, and so on.

The following steps describe how to use this option.

1. Type the number in front of the Log of File Operations option on the File Data display.

2. Do one of the following steps, depending upon the kind of information you want to see.

   ● Press SHIFT-NEXT to see a log of file actions for all files in your account. Go to step 3.

   ● Press NEXT to select specific files, users, or groups on which to see file action information. Do either or both of the following steps.

     - Type the name of a file or an alphabetical character from which to start the listing. Press NEXT.

     - Press NEXT to either see a list of file actions for all users in the account, or to type the name of an individual user and/or group and see a list of that user's or group's file actions. Press NEXT.

3. Select the time frame from which to compile the list by typing the letter in front of one of the following options.

Current log	Lists the most recent file actions.
Previous log	Lists the second most recent file actions.
Oldest log	Lists the oldest file actions.

4. Press HELP for more information on this option.

Inspecting File Data Displays

This option allows you to see general information about a file. The information displayed includes author information, security codeword settings, lesson information, and associated files.

The following steps describe how to use this option.

1. Type the number in front of the Inspect File Information option on the File Data display.

2. Press NEXT to see information on the first file in the account, or type the name of a specific file you want to inspect and press NEXT. The system responds by displaying information on that file.

```
NOTE
```

Typed security codes are displayed as a line of X's;
the actual code cannot be displayed.

3. Do one of the following steps.

- Press NEXT to enter another file name.

- Press + to see the next file in the account.

- Press SHIFT + to see the next file of the same type.

- Press – to see the previous file in the account.

- Press SHIFT – to see the previous file of the same type.

- Press BACK for other options.

Making a Leslist of Account Files

This option allows you to store the names of all the files in your account in a leslist. To use this option, you must have a TUTOR file which contains a leslist block.

The following steps describe how to use this option.

1. Type the number in front of the Make a Leslist of Files option on the File Data display.

2. Type the name of the TUTOR file which contains the leslist block you want to use. Press NEXT.

3. Type the name of the leslist block in the TUTOR file. Press NEXT.

4. Type either y to delete all current data in the leslist, or type n to keep the data.

5. Do one of the following steps, depending upon the type of information you want to list in the leslist.

- Press NEXT to list all files in the account.

- Press SHIFT-NEXT to select the type(s) of files to list. Select file types by typing the letter in front of the file you want to list. (All file types are automatically listed as selected until you change them. Type – to turn off all selections and make your own.) Press NEXT when finished.

Listing the Last Editors of Files

This option allows you to see a list of the users who last edited files in the account. To use this option, you should have a one-part dataset (having 320 words per record) in which to store the information. (Refer to Creating Files earlier in this section to learn how to create a dataset file.)

The following steps describe how to use this option.

1. Type the number in front of the Last Editor List option on the File Data display.

2. Do one of the following steps.

- Press DATA to compile a new list or to update the current one.

- Press NEXT to see the information already stored in the dataset.

3. Type the name of the dataset with which you want to work. Press NEXT.

LESSON USAGE DATA

The Lesson Usage Data option on the Account Main Options display helps you determine which lessons in your account are actively being used and by which accounts. This option also charts statistics on specified lesson use, indicating the names of the accounts which accessed the lesson, the number of times the lesson was used, the total number of hours it was used, and other statistical information. You can also keep a record of which accounts most frequently use your lessons.

To see the Lesson Usage Data options, type the letter in front of the Lesson Usage Data option on the Account Main Options display.

The following paragraphs describe the options available from the Lesson Usage Data display (figure 5-7).


```
Account  ---------- testa on minne

Lesson Usage Information


      1.  Selected major users list
          (other accounts using your lessons)

      2.  Usage data by lesson
          (usage of each lesson by selected major users)

      3.  References by other accounts
          (uses of all lessons by other accounts)

      4.  References to lessons
          (uses of each lesson by anyone)
```
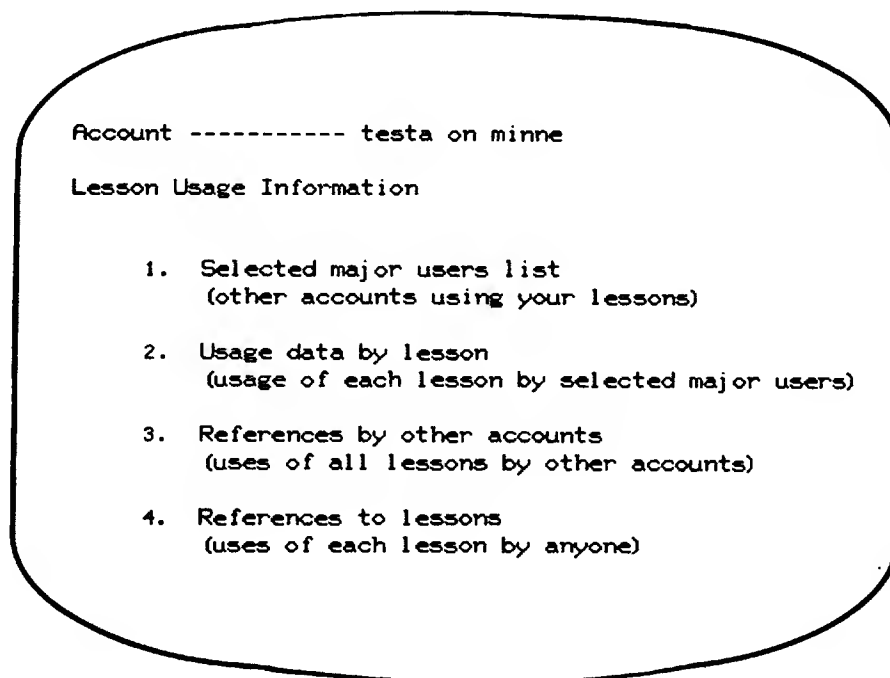
Figure 5-7. Lesson Usage Data Display

Listing Selected Major Users

This option allows you to record the names of accounts which are frequent users of lessons in your account. You can determine which accounts most frequently use your lessons from the References by Other Accounts option (described later).

To list the major users of lessons in your account, type the number in front of the Selected Major Users List option, type the number of the list position where you want the account name to appear and press NEXT. Type the account name and press NEXT.

Usage Data by Lesson

This option charts statistical data on the use of lessons in your account by other accounts. The information is charted individually for each lesson. The type of data displayed includes:

- The names of the accounts using the lesson (the nonmajor entry includes all accounts that are not listed in the major users list).

- The number of times the lesson was accessed.

- The total number of hours the lesson was used.

- The number of times the lesson was completed and the average completion times. (A completion is recorded every time a user exits a lesson with the completion flag already set in the lesson. Refer to the -lesson- command in AIDS for more detailed information.)

- The number of reviews made. (A review is counted every time a user enters a lesson with the completion flag set in the lesson.)

To see statistical information on a lesson, type the number in front of this option. Type either the name of the lesson on which you want to see data and press NEXT, or press SHIFT-NEXT to see information on the first lesson in the account. Information on lesson usage is updated several times each day.

References by Other Accounts

This option lists the names of all the accounts which used your lessons and also lists the number of times they used them. From this list, you can determine which accounts are the most frequent or major users of your lessons and include these accounts in the Selected Major Users list. The data listed are accumulated beginning with the date listed at the top of the display. The data can be cleared by pressing SHIFT-HELP while viewing the data; this resets the date to the current date.

To see information on major users of lessons, type the number in front of the References by Other Accounts option.

References to Lessons

This option lists the names of all the lessons in your account and the number of times they were accessed by users in any account. The data listed are accumulated beginning with the date listed at the top of the display. The data can be cleared by pressing SHIFT-HELP while viewing the data; this resets the date to the current date.

To see this information, type the number in front of the References to Lessons option.

LISTING CURRENT ACCOUNT USERS

The Listing Current Account Users option allows you to see a list of the users in your account who are currently signed on to the PLATO system.

To see this information, type the letter in front of the Current Users in This Account option on the Account Main Options display.
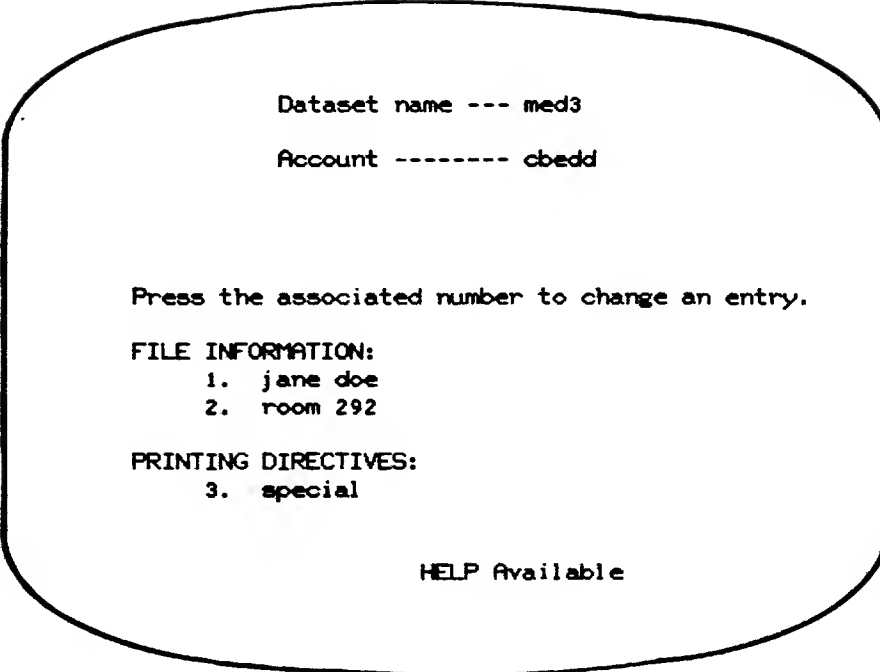
REPORT GENERATOR OPTIONS

The Report Generator option on the Account Main Options display allows you to copy information about your account and its files into a dataset file in a form suitable for printing. The kind of information you can copy from your account includes:

- A list of files in your account.

- A log of file operations.

- The names of the last editors of files.

To use the Report Generator option, you must have a dataset file in which to store the copied information. The length of the dataset depends upon the amount of information you want to copy; however, a 320-word per record, one-part dataset is usually sufficient. (Refer to Creating Files earlier in this section to learn how to create a dataset.)

In order to receive a printed copy of the dataset, you must separately request that a print be made and sent to you. If you use the PLATO system print request feature, you must fill out the Author Information display (figure 5-8) in the dataset file with your name, your mailing address, and printing instructions. Type the instruction special at the printing directives option. (Refer to Requesting Prints in section 4 for information on how to request prints.)

```
              Dataset name --- med3

              Account -------- cbedd




        Press the associated number to change an entry.

        FILE INFORMATION:
              1.  jane doe
              2.  room 292

        PRINTING DIRECTIVES:
              3.  special



                            HELP Available
```

Figure 5-8. Author Information Display

The following steps describe how to use the Report Generator option to copy account information into a dataset file.

1. Choose the Report Generator option from the Account Main Options display by typing the letter in front of the option.

2. Type the name of the dataset file in which the information can be stored. Press NEXT.

3. Type the write codeword for the dataset (if required). Press NEXT.

4. Type the record number of the first record in which you want the data stored and press NEXT.

5. Select the paper width for the data to be printed on (type n for business-sized paper, w for traditional computer paper). Press NEXT. The system displays four print options.

6. Select an option by typing the number in front of the option. (If you choose the Print Log option, the system displays three logs to choose from: current - most recent log; previous - second most recent log; and old - least recent log. Type the letter in front of the log you want to print. After you select a log, you can type + or SHIFT + to advance the time-frame or type - or SHIFT - to reverse the time-frame. Type the letter in front of the time at which you want the listing to begin.)

7. After processing is complete, the options (in step 6) appear again with a new choice: Terminate Dataset and Exit. Choose this option to ensure the dataset is correctly terminated and to prevent extraneous information from appearing in the print.

```
┌──────┐
│ NOTE │
└──────┘
```

If the dataset fills up during processing, you are asked to enter the name of another dataset in which to continue processing. If there is no other suitable dataset available, press BACK to terminate processing of the report generator.

GROUP RECORDS REPORT GENERATOR OPTIONS

The Group Records Report Generator option on the Account Main Options display allows you to copy information about groups within your account into a dataset file in a form suitable for printing. The kind of information you can copy about the groups includes:

- Group rosters.

- Group statistics.

- Student and router variables.

- Group directories.

To use the Group Records Report Generator option, you must have a dataset file in which to store the copied information. The length of the dataset depends upon the amount of information you want to copy; however, a 320-word per record, one-part dataset is usually sufficient. (Refer to Creating Files earlier in this section to learn how to create a dataset.)

In order to receive a printed copy of the dataset, you must separately request that a print be made and sent to you. If you use the PLATO system print request feature, you must fill out the Author Information display (figure 5-8) in the dataset file with your name, your mailing address, and printing instructions. Type the instruction special at the printing instructions option. (Refer to Requesting Prints in section 4 for information on how to request prints.)

The following steps describe how to use the Group Records Report Generator option to copy group file information into a dataset file.

1. Choose the Group Records Report Generator option from the Account Main Options display by typing the letter in front of the option.

2. Type the name of the dataset file in which the information can be stored. Press NEXT.

3. Type the write codeword for the dataset (if required). Press NEXT.

4. Type the record number of the first record in which you want the data to be stored and press NEXT; or press NEXT to store data beginning in the first record of the dataset.

5. Press SHIFT-HELP to zero (clear) the records, or press NEXT if they are already zeroed (cleared) or if you are going to store data in records not previously used. The system displays a list of group file print options.

6. Select the option you want printed by typing the letter in front of the option. Press HELP for an explanation of the options.

ARCHIVING FILES

The archiving feature is being developed at the time of this writing (Cut 22 of the system software), and is not currently available to all accounts. When released, the archiving feature will allow you to archive (store) and retrieve archived files in your account and see a list of the archived files in your account.

CONTROLLING PRINT ACCESS

The print request feature allows users to request prints of files to which they have access on the PLATO system. Not all users in all accounts, however, can use this feature. The print request feature is one of the few PLATO system features which is not automatically available to all accounts. To use this feature, account owners should contact a Control Data sales representative and request that the print feature be enabled in their accounts. After the account is given print access, the account owner should create a print request access list to control which users in the account can use the feature.

A print request access list contains the names of groups in the account, as well as the names of individual users within the groups and information on whether or not they are allowed to use the print request feature. The account owner is responsible for creating and maintaining this access list. When a user requests a print, the system searches the access list to determine whether or not that user has been given access to use the feature. Users who have been granted access can use the feature; those who are restricted cannot.

The following steps describe how to create a print request access list.

1. Choose the Print Access Control option from the Account Main Options display by typing the letter in front of the option. The system displays the Print Request Access Options display.

2. Do one of the following steps, depending upon the kind of activity you want to do. Press HELP for more information on these options.

- Press NEXT to create or change your access list. (This option allows you to register groups and individual users within the groups to use the print request feature. You can also change an existing access list and restrict specific users from accessing the feature.) The following describes how to create and change an access list.

  - Type the name of a group to which you want to allow access. Press NEXT to add or change; or press SHIFT-HELP to delete. The system displays the access list for that group.

  - Either type the name of an individual user in the group to which you want to assign access, or type Other to assign or restrict access to all users or specific users in the group. Press NEXT. The system displays the user's access status.

  - Type either mr (may request) to allow that user access or no (none) to restrict access to that user.

- Press DATA to test an individual user's access status and make sure the access assigned is as you intended. Type the name of the user whose access status you want to see and press NEXT. Type the user's group and press NEXT. The system displays the user's access status.

- Press LAB to remove the access settings of all users in the access list and create a new list.

USING INTERACCOUNT OPTIONS

The interaccount options allow you to move and/or copy files between accounts on the same system. When you move a file between accounts, the copy of the file in the original account is deleted. When you copy a file between accounts, the copy of the file in the original account remains there.

To move or copy files, choose the Interaccount option on the Account Main Options display by typing the letter in front of the option, and follow the system instructions.

USING NETWORK OPTIONS

The networking features allow users to perform file operations between accounts on different PLATO systems. These features can be used as a tool for users whose accounts are spread across more than one PLATO system and for users who would like to engage in cooperative efforts with people on different PLATO systems. The options associated with the networking features allow users to copy files between accounts on different PLATO systems, destroy files on other systems, see logs of attempted and completed intersystem file operations, and connect notes files between systems.

Preparing the Account to Use the Networking Features

Before the networking features can be used, the account owner should determine whether or not the features have been enabled in the account, and then prepare the account to use the features. Currently, PLATO system operations personnel enable the networking features in an account. When the features are enabled, two additional options appear on the General Account Information display. These options are the Network Log Datafile option and the Network Alternate Log File option (figure 5-9). If these

options do not appear on the General Account Information display, the networking features have not been enabled in the account. The account owner should contact a Control Data sales representative and request to have the networking features attached to the account. These additional General Account Information Display options require the account owner to enter the names of two student datafiles which are used to record all attempted and completed network file operations requested from an account. These options must be accessed and the appropriate information entered before any user in the account can use the networking features.

```
Account  ----------- testa on minne

Account Owner  ----- renee lavalley / s

        Disk parts remaining -  262
        Disk parts allotted --  400        HELP is available.
        Files in account -----   47
        Subscriptions --------    0

        1.  Inspect code ---------------- No code--owner only
        2.  Data change code ------------ No code--owner only
        3.  File change code ------------ No code--owner only
        4.  Access by system personnel -- ALLOWED
        5.  Account access list --------- This account file

        a.  Lesson Notes File -----------
        b.  Default file change code ---- GROUP s
        c.  Default file inspect code --- ACCOUNT system
        d.  Network log datafile -------- rrl2
        e.  Network alternate log file -- rrl1


Press the number or letter to change an item.
Press        DATA for lesson access classes for this account.
Press SHIFT-NEXT to inspect or edit the account access list.

Account last changed on 11/03/80 at  9:00:33 am
by renee lavalley / s at station 0-4

destroy file zrrlact
```

Figure 5-9. General Account Information Display

NOTE

Two logs are required to prevent the log from writing over itself. When the first log is filled, the second is used. When the second is filled, the first is reused.

If considerable information is anticipated to be recorded, and/or if you want to keep the log for a long period of time, create a large datafile (up to 18 parts long). If minimal information is expected, a one- or two-part datafile should be sufficient.

The following steps describe how to access the datafile options on the General Account Information display and enter the appropriate information. (Refer to Creating Files earlier in this section to learn how to create a student datafile.)

1. Press DATA from the Account Main Options display.

2. Type the letter in front of the Network Log Datafile option.

3. Type the name of one of the datafiles. Press NEXT.

4. Type the letter in front of the Network Alternate Log File option.

5. Type the name of the second datafile. Press NEXT.

After the datafile information is entered on the General Account Information display, the Network option appears on the Account Main Options display. The Network option is the entry point for all intersystem file operations. It contains several options which allow users to perform a variety of intersystem file operations. To see the Network options (figure 5-10), type the letter in front of the Network option on the Account Main Options display.

```
                         Network Options

       Account name ------ testa on minne
       Account owner ----- renee lavalley / s

             a.   NTUs allocated each month ------- 45
             b.   NTUs allocated this month ------- 25
                  NTUs used this month ------------ 23
                  NTUs remaining this month ------- 2

         1.   Copy a file FROM this account TO another system.

         2.   Copy a file TO this account FROM another system.

         3.   Destroy a file in an account on another system.

         4.   Connect notesfiles across systems.

         5.   Display incomplete transfer requests from minne.

         6.   Display current log of completed requests.

         7.   Display previous log of completed requests.

                         HELP available
```

Figure 5-10. Network Options Display

The Network options are:

The Network Options display also contains information on network transfer units (NTUs). Refer to Understanding Network Transfer Units later in this section for information on NTUs.

● Copy a File FROM this Account TO Another System

Allows users to send a copy of a file in one account to a named account on another system.

Users with the same account and file names on different PLATO systems are cautioned that files from the sending system will replace files with the same names on the receiving system. For example, file "fiction" in account "library" on system "minna", will replace file "fiction" in account "library" on system "minnb".

If there is any doubt in the sender's mind that file "fiction" in account "library" on system "minnb" should be copied over by file "fiction" from account "library" on system "minna", a prefix (a letter put before the file name) should be added to the name of the copy of file "fiction" from system "minna" (for example, "pfiction").

● Copy a File TO this Account FROM Another System

Allows users to bring a file from an account on another system to the user's current account and system.

● Destroy a File in an Account on Another System

Allows users to destroy a file in a named account on another system.

● Connect Notes Files Across Systems

Allows users to connect notes files between and among PLATO systems, and thereby transfer notes and responses written in each notes file to other connected notes files on other systems. The result is a maximum of 34 general notes files, each on a different PLATO system, that combine the communications of the user communities. This option also allows users to disconnect connected files.

- Display Incomplete Transfer Requests

  Allows users to see a list of intersystem file transfer requests which have not yet been completed. Only requests for transfers of files from the system on which the user is signed on are displayed. (For example, if the user's account is library on system "minna", only requests for file transfers from account library on system "minna" to another system are listed.)

- Display Current Log of Completed Requests

  Allows users to see a list of the most recently completed intersystem file transfers.

- Display Previous Log of Completed Requests

  Allows users to see a list of completed intersystem file transfers which were not recent enough to be included in the current log of completed requests.

To prepare the account to use the network options, the account owner should determine what the networking needs of the account are, as well as determine which networking features can satisfy those needs. The account owner should also decide which users in the account (besides the account owner) need access to the network options and whether accounts and users on other PLATO systems need authorization to transfer files to the account. If the account's networking needs are minimal and simply require the account owner to copy files from the account to another account on a different PLATO system, no further account preparation is needed. If, however, the needs of the account require users other than the account owner to have access to the networking features, or require files from other systems to be copied to the account, the account owner must prepare an account access list.

An account access list allows the account owner to delegate file transfer (copy) authority to users in one or more accounts and PLATO systems, as well as determine and limit the accounts from which to receive transferred files.

The following paragraphs describe how to set up an account access list and assign access authorization to users.

Creating an Account Access List

Refer to Creating an Account Access List earlier in this section for information on how to create an access list for your account.

In order for users to copy files from one system to another and/or to delete files on other systems, users requesting the copy or delete must have appropriate access authorizations on both the initiating and receiving account access lists. Refer to Registering Users in the Account Access List earlier in this section for information on how to register users on your system.

After the networking features are enabled in your account, an additional option appears in the account access list: to see or edit access for people on another system. This option is the mechanism used to specify and control the following users.

- Users on other PLATO sytems who may send files to your account from another system.

- Users on other PLATO systems who may request copies of files from your account.

- Users on other PLATO systems who may delete files from your account.

- Users from other systems who may connect notes files on other systems to notes files in your account.

The To See or Edit Access for People on the Same System as the Account option is the option to use for specifying the following users.

- Users on your system who may send files from your account to other systems.

- Users on your system who may request that files from other systems be placed in your account.

- Users on your system who may connect notes files on other systems to notes files in your account.

An account access list can have two or more parts: an access list for users of the system in which the account resides, and an access list for users of any number of other named systems.

Requests for all intersystem file manipulations will be honored only if the user requesting a multiple system file action is listed in the account access list in all accounts, on all systems involved in the requested file manipulation.

Therefore, an account director wishing to use the networking features must complete the following steps.

1. Create an additional section in his or her access list for every other system with which file activity is anticipated.

2. Specifically list those users on other systems who are authorized to send, receive, or delete files or to connect notes files.

Assigning User Access

Each of the network options requires a specific set of access authorizations in order for users to access the options. Access authorizations are set on the User Access Options display in the account access list. The following list describes the appropriate access settings for each of the network options. (Refer to Assigning Access Options earlier in this section for information on how to set access authorizations.)

- Copy a File FROM your Account TO Another Account

  Authorizations required:

    - Authority to copy a file to another system in your account on your system.

    - Authority to create a file in the account on the destination system.

  Example:

    "jane doe/teacher/minnd" of account "school" wants to send a file to "mary jones/history/minna" who uses account "jrhi". "jane doe/teacher/minnd" needs authority to copy a file to another system in account "school" on "minnd", and "jane doe/teacher/minnd" needs authority to create files in account "jrhi" on "minna".

    If Jane and Mary regularly share on-line materials, the authorizations would probably be set up and retained. If this is a one-time collaboration, Mary would probably remove Jane's authority to create files in her account ("jrhi") as soon as she saw the file had been installed in her account.

- Copy a File TO Your Account FROM Another System

  Authorizations required:

    - Authority to copy a file to another system on the system the file is to be copied from.

    - Authority to create files in the account on the system the file is to be copied to.

  Example:

    Jane and Mary have used the same file with their students for one school term. Mary made a few additions to the file during the term which Jane would like to see.

    With authority to copy a file to another system in account "jrhi" on "minna", and authority to create files in account "school" on "minnd", "jane doe/teacher/minnd" could request the file be sent to her account on "minnd" from her account "school", requiring no access to the "minna" system.

- Delete a Copy of a File on Another System

  Authorizations required:

    - Authority to copy a file to another system in the account from which the request is placed.

    - Authority to delete files in whatever account the file resides.

Example:

> At the end of the school term, no changes have been made to the file that Jane loaned to Mary, and Jane still has her original copy of the file. Jane chooses to delete the file in Mary's account "jrhi" on "minna".
>
> To do this, "jane doe/teacher/minnd" needs authority to destroy files in account "jrhi" on "minna".

● Connect Notes Files Across Systems

To connect notes files across systems, a user must have authority within the access lists of the accounts containing the notes files to connect or disconnect files between systems. Notes files to be connected across systems must themselves allow connections. The option to allow or disallow connections exists within the director options in every notes file and can be changed only by the notes file owner.

Authorization required:

－ Authority to connect notes files between systems.

Example:

> Jane wants to connect notes file =janenotes= between "minnd" and "minna". To do this, Jane must have the authority to connect files between systems in the account containing =janenotes= on "minnd". She must also have authority to connect files between systems in the account containing =janenotes= on "minna". Therefore, the "minna" account owner (or director) must create a special "minnd" section in the account access list and give Jane authority to connect files between systems. In addition, the file owner of =janenotes= on both systems must allow connections in the director options of each notes files.

Intersystem File Security

As an account owner or director, you are responsible for the security of files in your account. When transferring files from one system to another, you should be cautious about using group and account codes to secure these files. If you have several accounts on several systems and all the accounts share the same name, then account coded files sent between and among your accounts on these systems are secure. However, you should never send your account coded files to an account of a different name. This allows other users to copy your file and its codewords; transfer the file back to the original system; and gain access to your group, lessons, or databases. Similarly, group coded files should only be sent between and among accounts which also contain groups of the same name. However, because group ownership cannot be simply determined across systems, the PLATO system does not always allow group coded files to be copied across systems. Typed codes offer the best security for files sent between systems and provide the best protection from unauthorized users accessing your account.

When you send a copy of a file from your account to an account owned by another person or group, you no longer own that copy of the file. The file's codewords could be changed by a new account director, the lesson code could be changed, the lesson could be submitted for publication by another person using and relying on work done by you or others in your account, or other unauthorized changes could be made. Such practices are not ethical; nevertheless, they are possible and should be considered. You should be extremely selective in determining which files to send to other accounts over which you have no control.

Understanding Network Transfer Units (NTU)

A unit of inter-PLATO system data transfer is a network transfer unit (NTU). The NTU is the tracking and billing unit for use of the networking features.

All accounts with monthly network service allocations can send 400 NTUs per billing period for each subscription within the account at no charge.

NTU Sizes and Priorities

Not all data receives the same priority when being transmitted between systems. Small amounts of data, such as notes and personal notes that are only 128 computer words each, receive high priority. Larger amounts of data, such as files to be transferred, receive the lowest priority.

One note is one NTU. One note sent to five connected notes files is five NTUs.

Intersystem transactions are billed as one NTU for every 128 computer words. Any remainder is rounded up to become an additional NTU.

When a TUTOR file is sent from one system to another, one NTU will be charged for each block sent. When a dataset, nameset, datafile, notes file, or group file is sent to another system, seven NTUs will be charged for each part sent. When a request to delete a file or a set of files is sent to another system, one NTU will be charged for each file deleted.

NTU Accounting

NTUs are tabulated as they are sent from a system. Therefore, files sent from an account, deletion requests placed in an account, notes sent by intersystem notes files within an account, and transactions sent from namesets within an account are all charged as NTUs to the account. When a request to copy a file from another system is placed in an account, NTUs are charged to the account sending the file, not to the account in which the request was placed. When a request for an intersystem file manipulation fails, no NTUs are charged to the account. Only completed requests are charged.

Each time an information transfer request is issued (file copy, file delete, notes file connection, intersystem note copy, intersystem transaction), the appropriate number of NTUs is added to the account tabulation. If at some point during the billing month an account reaches its NTU ceiling, all information transfer ceases until the account owner raises the NTU limit.

Users are asked to note that although intersystem notes and transactions are not listed in the network log associated with each account, they are tabulated as NTUs used in the account.

NTU Controls

Each account owner has control over the number of NTUs that can be sent from an account within a billing cycle. Only NTUs sent from an account will be charged to that account.

All account owners have the option to increase or decrease an account owner-controlled limit on the amount of network traffic from his or her account within a billing cycle. Therefore, an account owner may choose to limit activity to remain within the allocation or put a ceiling on the amount of traffic for which he or she is willing to pay in a given billing cycle.

Choosing Network Options on the Account Main Options Display provides a list of the networking options and also displays the following:

a. Network Transfer Units allocated each month – – – – xxxxx

b. Network Transfer Units allocated this month – – – – xxxxx

Network Transfer Units used this month – – – – – – – xxxxx

Network Transfer Units remaining this month – – – – xxxxx

NTUs allocated each month allows the account owner to indicate a ceiling on the number of NTUs for which he or she is regularly willing to pay. NTUs allocated this month allows the account owner to indicate a specific number of NTUs allowed for a given billing month, without permanently raising or lowering the NTU ceiling.

Only an account owner can alter these allocation fields. To alter the ceilings, type a or b and enter at the arrow the desired ceiling for all months or the current month.

When networking features are initially enabled in an account, both fields will automatically be set to the number of NTUs allocated to the account. Authorization of any service beyond the allocated level must be provided by the account owner.

At the end of each billing period, the NTUs used will be set to zero and the NTUs remaining will be set to the monthly allocation. At that time, if the NTUs allocated this month are not equal to the NTUs allocated each month, the special this month allocation will be set to equal the regular monthly allocation. Therefore, account owners do not have to manually clear special allocations at the end of a given month.

Users should note that NTUs are not cumulative from month to month, nor are they transferable from one account to another.

APPENDIXES

The keyboard is the primary means of input to the PLATO system. The keyboard consists of character keys and function keys.

The character keys are the unshaded keys in figure A-1, part A. These keys resemble typewriter keys and, when pressed, display the associated characters on the screen. Five shaded keys to the extreme left of the character keys also display characters. The TAB key and the shaded keys to the extreme right of the character keys are function keys. They are used for a variety of purposes and do not display characters.

The two SHIFT keys produce the capital letters of the alphabetic characters and allow the other keys (numeric and function keys) to have two characters or functions, for example, the spacebar is a backspace (with no erase) when shifted. Figure A-1, part B shows the lowercase (unshifted) keyboard, and figure A-1, part C shows the uppercase (shifted) keyboard. When you want a shifted character, hold the SHIFT key down while pressing the appropriate key.

Study the PLATO lesson Øintro, An Introduction to the PLATO Keyboard, for more information on the keyboard.

CHARACTER KEYS

The 46 character keys display numbers, lowercase letters, punctuation, and arithmetic characters (figure A-1, part B). These keys also display uppercase letters and other punctuation marks when shifted (figure A-1, part C).

To display the lowercase ACCESS characters (figure A-1, part D), press the ACCESS key (SHIFT- ⬚ key), release it, and press the appropriate key. To display the uppercase ACCESS characters (figure A-1, part E), press the ACCESS key, release it, and press the appropriate shifted key (for example, to display the copyright symbol, press the ACCESS key, release it, and press SHIFT-c). These characters are always available. However, the author can create and specify other characters with the FONT and MICRO keys, because the keyboard is redefinable. If a lesson does not specify a micro table, the MICRO key functions in the same manner as the ACCESS key.

FUNCTION KEYS

Each function key has a lowercase function and an uppercase function. To use a lowercase function, press the function key. To use an uppercase function, hold the SHIFT key down while pressing the function key. The SUPER and SUB keys also have ACCESS functions.

Figure A-1. Keyboard Assignments

The author enables the needed function keys and usually informs the student in the lesson which function keys are active.

NEXT key

The NEXT key is the most frequently used key on the keyboard. This key indicates to the PLATO system that the response to a question is complete or that the student is ready for the lesson to continue. Because of the fundamental nature of the NEXT key in relation to a lesson, when in doubt, press NEXT.

BACK key
HELP key
DATA key
LAB key

These keys are used in PLATO lessons and their functions are programmed by the lesson author; therefore, a specific function cannot be provided for each key. Frequently, however, pressing BACK displays information shown on the previous display; pressing HELP provides additional information to further explain a topic described in the lesson; pressing LAB provides problems to solve; and pressing DATA provides supplemental information. These are only examples of how these function keys can be used; each author programs the keys' functions according to the requirements of the lesson. Sometimes, additional keys (other than BACK, HELP, DATA, and LAB) are needed for moving in the lesson. In these cases, the lesson author often uses the SHIFT key in conjunction with a function key; for example, SHIFT-BACK, SHIFT-DATA, and SHIFT-LAB.

SHIFT-HELP key

The SHIFT-HELP key is usually used to delete information from the PLATO system.

SHIFT-STOP keys

The SHIFT-STOP keys are the only keys that an author cannot control. Pressing the SHIFT-STOP keys stops execution of the lesson and returns you to system control (a router for students, the Author Mode display for authors, the PLATO Facilities display for instructors). These keys are also used to condense a lesson.

TERM key

The TERM key is similar to the help keys, but the display does not erase when this key is pressed. By pressing TERM (hold down the SHIFT key while pressing the TERM/ANS key), the message

what term? >

appears on the bottom of the screen. After typing in the desired term and pressing NEXT, the student arrives at the appropriate part of the lesson if the author has specified such a term. For example, this key is useful when a lesson contains an index of available topics. Pressing TERM and typing the word index takes the student to the index of the lesson, if so specified by the author. If the student types in a term that the author has not specified or allowed, nothing happens.

ANS key

The ANS key answers a given question if the author has so provided. Often, authors do not specify that the student should be given the proper response to the question when he/she presses the key. In this case, the ANS key has no effect. In PLM, the student presses the ANS key to record a response.

ACCESS key

Not all of the permanent characters available to the PLATO terminal appear on the keyboard. These hidden characters are made available by the ACCESS key and are similar to the visible characters with both lowercase and uppercase access characters. Figure A-1, part D shows the lowercase access characters, and figure A-1, part E shows the uppercase access characters. The ACCESS key is the SHIFT-□ (SHIFT-square) keys on the right side of the keyboard. This is the only function key without a name written on the key cap.

SUPER key

Use the SUPER key to write superscripts or to perform exponentiation in an algebraic expression. Pressing SUPER causes the next character to appear 5/16 of a line higher than ordinary text. If the superscript contains more than one character, press SHIFT-SUPER to lock the terminal into superscript mode. All typed text then appears as part of the superscript until you press SHIFT-SUB.

Pressing ACCESS SUPER (UP) causes the next character to appear one line higher than ordinary text (press ACCESS, release it, and press SUPER). Pressing ACCESS SHIFT-SUPER locks the terminal into this mode so that all typed text appears on the higher line until you press ACCESS SHIFT-SUB.

SUB key

The SUB key is similar to the SUPER key but produces subscripts rather than superscripts (that is, the character appears 5/16 of a line lower than ordinary text). Pressing SHIFT-SUB locks the terminal into subscript mode. The terminal stays in this mode until you press SHIFT-SUPER.

Pressing ACCESS SUB (DOWN) causes the next character to appear one line lower than ordinary text. Pressing ACCESS SHIFT-SUB locks the terminal into this mode so that all typed text appears on the lower line until you press ACCESS SHIFT-SUPER.

MICRO key

The MICRO key can perform either of two functions, depending upon the lesson. If the author has not specified a micro table, the MICRO key functions in the same manner as the ACCESS key. If the author has specified a micro table, the MICRO key accesses the table.

The micro table specifies up to 40 characters to replace a single character if a press of the MICRO key precedes the single character. For example, the key c may have a micro associated with it such that pressing MICRO and then c produces the text PLATO on the screen.

FONT key

In addition to the permanent characters, the author can specify as many as 126 other characters. These characters vary from lesson to lesson. When a lesson uses them, it usually informs the student. The student accesses them with the FONT key (SHIFT-MICRO). Unlike the SUPER, SUB, or ACCESS keys, you need not press FONT each time you want a character from the alternate character set. Instead, when you press FONT, the terminal switches to the alternate character set (for example, the Cyrillic alphabet), where it remains until you press FONT again. The FONT key is most frequently used by authors. Lessons can be coded to eliminate the need for students to use this key.

TAB key

The TAB key functions in the same manner as the tab key on a typewriter; it allows you to skip from the left screen margin to a specified column on the same line. The TAB key differs from the tab key on a typewriter in that the author (using the -tabset- command in a lesson) rather than the student controls the positions of the columns; thus, the key has no effect if the lesson does not specify the use of the key.

CR (carriage return) key

The carriage return (SHIFT-TAB) returns the position of the text to be entered at an arrow to the left margin; however, this is not necessarily the left side of the screen. The position at which your response begins also sets that column as the left margin for a carriage return.

COPY key †

The COPY key removes a word or line of text or code you typed before pressing NEXT. Each time you press COPY, one word of the line erased is returned. The COPY key can also be used in replace mode to easily correct errors in text or code. The COPY key functions similarly to the EDIT key.

ERASE key †

Use the ERASE key to erase part of a word or response you typed before you press NEXT. Each time you press ERASE, one character is removed from the response. Pressing SHIFT-ERASE removes an entire word.   Erasing begins with the last character entered in the response.

EDIT key †

The EDIT key functions similarly to the COPY key. The first time you press EDIT, an entire typed response is removed from the screen (when EDIT is used before NEXT is pressed); thereafter, each time you press EDIT, one word of the response is brought back. Pressing SHIFT-EDIT returns the remainder of the response. For example, if you typed President George Washington and want to change it to George Washington, press EDIT to erase the response, then press EDIT to return President. Press SHIFT-ERASE to erase President, and press SHIFT-EDIT to return George Washington. Use of the EDIT key is circular (that is, if the entire response has been returned to the screen, pressing EDIT again removes the entire response, as at its first use).

☐ (square) key

If the author enables the square key, it functions in the same manner as the COPY key, except that each press of the square key copies a single character from the string instead of an entire word.

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† When using the COPY, ERASE, and EDIT keys, a word is defined as a set of continuous characters separated from the other characters of the response with a blank space or punctuation.

The following steps describe how to sign on to the PLATO system through the Data Services Network (DSN) using an IST-III terminal.

1. Turn on the terminal (the power switch is on the right side of the terminal near the bottom of the terminal).

2. Dial the telephone number that connects the terminal to the Data Services Network when the system displays the Host Not Connected message. If you get a busy signal, all lines are in use. (Dial again in about 15 minutes). If the phone rings but is not answered, part of the network is down. (Dial again in about 15 minutes.)

NOTE

If the Host Not Connected message does not appear or if you hear a beep, call your terminal services manager.

3. When you hear a high-pitched tone, do one of the following things.

   ● Insert the handset into the coupler if you are using an acoustic coupler. This connects the terminal to the Data Services Network.

   ● Push the DATA button if you have a modem connected to your terminal. This disconnects the telephone and connects the terminal through the modem to the Data Services Network.

NOTE

This button is on the modem. The TALK/DATA switch on the terminal is inoperative.

4. Observe the loading sequence at the bottom of the screen. When the sequence is complete, a Terminal Ready message appears at the bottom of the screen and //_ appears at the top of the screen. (The loading sequence usually takes 1 or 2 minutes.)

5. Type I and press NEXT to run the terminal with the PLATO system. The system responds with the message Please Sign On.

6. Type in the identifier of the PLATO system you will be using. Press NEXT. (This identifier should have been given to you with your sign-on.)

<div align="center">

NOTE

</div>

If the Please Sign On message is garbled, the network misinterpreted the terminal type indication. Hang up the telephone and begin step 2 again. If the problem persists, call customer service for assistance.

7. When the terminal connects properly to the PLATO system, the Welcome Display appears (refer to figure 1-8).

8. Follow the normal PLATO sign-on procedure described in the Introduction (section 1).

Access list

> A structured list of sign-ons and associated authorizations within a PLATO account. It allows an account owner to delegate all or some defined set(s) of responsibilities within the account.

Account

> A named file on a PLATO system through which all contracted PLATO resources are managed by a designated account owner or designee.

Account director

> A person indicated in an account's access list by the account owner as having joint responsibility with the account owner to control resource use. Any number of account directors may be named.

Account owner

> A user identified by sign-on name to the PLATO system who controls resource use within a PLATO account.

AIDS

> An on-line reference manual containing information on the PLATO Author Language and PLATO system features.

Author

> A person who uses the PLATO system to develop instructional materials for the PLATO system.

Author mode display

> A display shown to authors after they have identified themselves to the PLATO system. It is the display from which authors indicate which files they want to edit or use as students would use them.

Block

> A 320 computer word subdivision of a TUTOR file. Different types of blocks are used to store different kinds of instructions for the PLATO system.

Catalog of Available Courseware

> An on-line catalog that lists and provides information on all published PLATO courseware. Also referred to as the F Catalog.

Change code

> A series of up to 10 typed characters or an ACCOUNT or GROUP designator chosen for every file on the PLATO system for the purpose of assuring file security. Only authors within the designated ACCOUNT or GROUP, or authors who know the designated series of typeable characters comprising the change code, can change the contents of a given file. Most files on the PLATO system contain change codes.

Character

A 16-dot by 16-dot area on the PLATO screen which is composed of 512 dots by 512 dots. Each of the dots within a 16- by 16-dot grid can be displayed or not displayed, thereby presenting letters, numbers, punctuation, pictures, or Russian characters. A character is also referred to as a 6-bit segment of the 60-bit computer words used by Control Data CYBER computers. Each computer word contains 10 characters.

Character set

A set of up to 126 characters (see Character) designed by an author to be presented on the PLATO screen. A group of character sets provided by the PLATO system can be found in lesson "charsets". Charset "standard" in lesson "charsets" contains the characters most frequently used on the PLATO system.

Charset

See Character set.

Code

A series of PLATO Author Language statements.

Command

The first part of a PLATO Author Language statement placed in the leftmost margin of a TUTOR file block. Indicates the task to be performed.

Communications error

Interference on the communications lines between the central computer and a PLATO terminal which causes display distortions.

Computer word

1. A combination of 10 letters, numbers, and/or spaces (capital letters count as two characters).

2. Sixty bits.

3. Ten 6-bit characters. Also referred to as a variable.

Condense

The process of changing PLATO Author Language code into binary code to be read by the computer.

Condense error

A line of code in a TUTOR file which has not been entered in the proper form or contains references which cannot be found. Such lines are identified during the process of condensing a lesson and are displayed to authors.

Courseware

Lesson material prepared by authors for students.

Crash

Unexpected and therefore unannounced PLATO system failure, usually due to hardware errors.

Curriculum

> A hierarchical study plan composed of courses, modules, and lessons.

Datafile

> A special file type that collects and sorts information, usually student data. Datafiles are used predominantly as a formative evaluation tool. An instructor needs an author's help to set up and use a datafile. Datafiles cannot be used with published courseware.

Dataset

> A special file type from which records may be read using –datain– or upon which data may be written using –dataout–. Datasets are useful for storing data which, because of its quantity or structure, may be conveniently accessed in relatively small blocks from a possibly much larger pool.

Default file code

> A security code chosen by an account's owner which is then automatically assigned to all files created in an account.

Delete

> Permanently remove.

Display

> The set of text and/or graphics seen on the PLATO terminal screen at one time.

Documentor

> A special type of file with its own editor, used for writing and maintaining technical specifications and other documents. All user types can be given access to documentor files. No programming knowledge is needed to use a documentor file.

Easy editor

> The PLATO notes editor available to all users, but primarily used by instructors and students. Contains fewer options than the standard editor.

ECS

> See Extended core storage.

Edit

> To change any information in a note, document, student record, or file.

Editing directives

> Instructions used in the PLATO system editor to insert, delete, or change code.

Editor

> Any lesson that allows users to insert and change information in files. The PLATO system supplies editors for student records (group editor), documents (documentor), notes (lesson notes), and so on. Users can also write their own editors.

ESM

See Extended semiconductor memory.

Execute

The process of using a PLATO lesson as a student. From an author's perspective, the sequential reading and interpreting of a binary code created by the process of condensing a lesson, and the subsequent presentation of the lesson on the terminal screen.

Extended core storage (ECS)

The part of the computer used for short-term storage of lessons being executed.

Extended semiconductor memory (ESM)

An alternative to ECS as short-term storage for lessons being executed.

F Catalog

See Catalog of Available Courseware.

File

A delegated amount of space in the PLATO system's computer memory in which information can be stored.

Filespace

An amount of disk space in computer memory from which files can be created and in which information can be stored. The equivalent of 2240 PLATO computer words, or one part (seven blocks) of a TUTOR file.

Function keys

Keys used to request new displays to appear on the screen or add new information to the display.

Graphics

Pictures or lines drawn on the PLATO screen.

Group

1. A number of users who share a commonality in their involvement with the PLATO system.

2. A specific file type in which users are registered, which tells the system what to show to each user, and which stores progress data on each user.

Hardware

The mechanical equipment which makes up the computer system.

Help sequence

A sequence of instructional material in a lesson accessed by pressing HELP.

Index lesson

A lesson which presents an index or list of lessons for students to select to study.

Insert

To type.

Inspect

An access level. The ability to read any information in a file, but with no ability to alter or add to the information seen.

Instruction

The two components, command and tag, of a PLATO Author Language statement.

Instructional management tool

One of four organization/delivery mechanisms provided by the PLATO system to individualize curricula for students' use. See Index lessons, "mrouter", PLATO Learning Management, and Router lesson.

Instructor

A user who is responsible for registering students in a group, assigning lessons, and monitoring student progress.

Instructor file

A file used in conjunction with "mrouter" (a PLATO system supported instructional management tool) which contains specific information about a curriculum's components and design.

Intersystem

Pertaining to two or more PLATO systems.

Keyset/keyboard

The typewriter-like part of a PLATO terminal that is used to enter information. A standard typewriter keyboard, mathematical operations keys, and several function keys are included.

Lesson execution error

An uninterpretable line in the code of a lesson which causes the lesson to stop working because the PLATO system cannot determine what should be done next.

Lineset

A set of programmed, line-drawn characters.

Micro PLATO Language

The computer language used to write lessons for the Micro PLATO system.

Modification (mod) words

An optional feature within the PLATO system editor which automatically documents changes made in each line of code or text in a TUTOR file.

Module

A group of lessons which relate to the same basic subject, and which are studied as one instructional unit.

Monitor mode

The state of one user seeing the same display on his/her own screen that another user is seeing on his/hers.

"mrouter"

An instructional management system which contains the mechanics for designing and presenting instructional units (modules) to students.

Multiple

A user who shares a student sign-on with several other users and for whom no records are kept.

Navigational keys

Keys which work only if an author programs them to work. Usually branch to a new series of displays in the lesson. Includes keys such as NEXT, DATA, BACK, LAB, and HELP.

Notes

Messages stored in special notes files which contain communications between and among defined sets of PLATO system users.

Notes file

A special file which stores notes.

On-line

The state of being properly signed on to the PLATO system.

On-line author listing

A list of all authors and instructors on the PLATO system and biographical information about them. Accessed through lesson "authors".

Part

A subdivision of a file capable of storing up to 2240 computer words.

Personal help

On-line help received from an author, instructor, or PLATO consultant through TERM-consult, TERM-ask, or TERM-talk.

Personal notes

Private messages between two users.

PLATO

The Control Data computer-based education system.

PLATO Author Language

The computer language used for writing lessons for large (central) PLATO systems.

PLATO Facilities display

The navigational display shown to all instructors from which all instructor options can be accessed.

PLATO Learning Management (PLM)

The PLATO computer-managed instruction capability that is designed to provide student routing, diagnostic testing, selection of appropriate learning resources, and comprehensive record keeping to support individualized instruction. Authors use prompted editors to construct PLM modules and curricula without programming.

PLATO name

The first part of a user's sign-on which is registered in the PLATO system. It can contain up to 18 characters.

PLATO password

A secret word selected by each user to secure her/his sign-on. The third part of a user's sign-on.

Prints

Paper copies of on-line files.

Programmed help

A help sequence coded in a lesson by the lesson author and accessed by pressing HELP.

Published lesson

Courseware that is copyrighted and included in the Catalog of Available Courseware. Published courseware that has been through a careful review process. Should be free of errors and has guaranteed availability. Published courseware is never deleted or altered without notice.

Router lesson

A special PLATO Author Language lesson written by an author to organize lesson groupings and sequencing and to define some student/course data collection.

Save buffer

A feature which temporarily stores lines of text or code (up to 320 words).

Security codes

Codewords assigned by the author of a lesson to limit who can see or change the lesson code. Also includes codewords that control access to the lesson from other lessons: access to common and access by using the -jumpout- and -use- commands.

Sign off sequence

The process of properly removing yourself from the PLATO system's records and properly disconnecting the terminal from the PLATO system computer.

Sign-on

The three user identification elements — PLATO name/PLATO group/PLATO password — registered in the PLATO system for each user.

Sign-on sequence

Giving the PLATO system the user's name, group, and password to gain entry to the system.

Site

A group of PLATO terminals which share a pool or specified amount of ECS space.

Software

Instructions (programs and routines) that direct the operation of a computer system. The PLATO system software is that set of COMPASS and TUTOR code required to operate a PLATO system. To distinguish user software from PLATO system software, user's programs are referred to as courseware.

Standard editor

The PLATO system editor used for notes and TUTOR files. Contains a large number of editing capabilities.

Statement

The two components (command and tag) of a PLATO Author Language instruction.

Student

A person who uses the PLATO system to study assigned lessons.

System

The interdependent structure of hardware, software, and courseware that performs together as a functional unit.

System programmers

Persons responsible for developing the PLATO Author Language, Micro PLATO Language, and other PLATO system features (such as PLM, notes, groups, accounts, and AIDS).

Systems personnel

Users responsible for maintaining the PLATO system.

Tag

The second part of a PLATO Author Language statement.

Template

A student record used as a model or pattern for other student records.

TERM-ask

A PLATO system feature that allows users to request and receive help from defined sets of authors and instructors.

TERM-calc

A PLATO system feature that calculates mathematical expressions.

TERM-comment

A PLATO system feature that allows users to write a note to the author or maintainer of any lesson they are using.

TERM-consult

A PLATO system feature that allows users to contact a PLATO services consultant for on-line help.

TERM-spell

A PLATO system feature that displays the correct spelling of a word.

TERM-talk

A PLATO system feature that allows two users to communicate on-line by typing messages back and forth.

TERM-time

A PLATO system feature that displays the current time and date.

TUTOR file

The type of file used to write PLATO lessons into which PLATO Author Language and Micro PLATO Language code is inserted. Consists of parts and blocks.

User

A person who has a sign-on for a PLATO system. See User types.

User list

An on-line list of all authors and instructors who are currently signed on to the system and who wish to be listed.

User record

A section of a group file containing specific information about a user and that user's interaction capabilities and history with the PLATO system.

User types

Any of the following sign-on categories: student, multiple, instructor, or author. One's user type generally identifies those system options and features available to him/her.

INDEX

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